Florida WILDLIFE

JULY, 1956

The Florida Magazine for all Sportsmen

25 CENTS

BASS IN BUNCHES

FILM FUN IN FLORIDA

20,000 YEARS
OF HUNTING & FISHING

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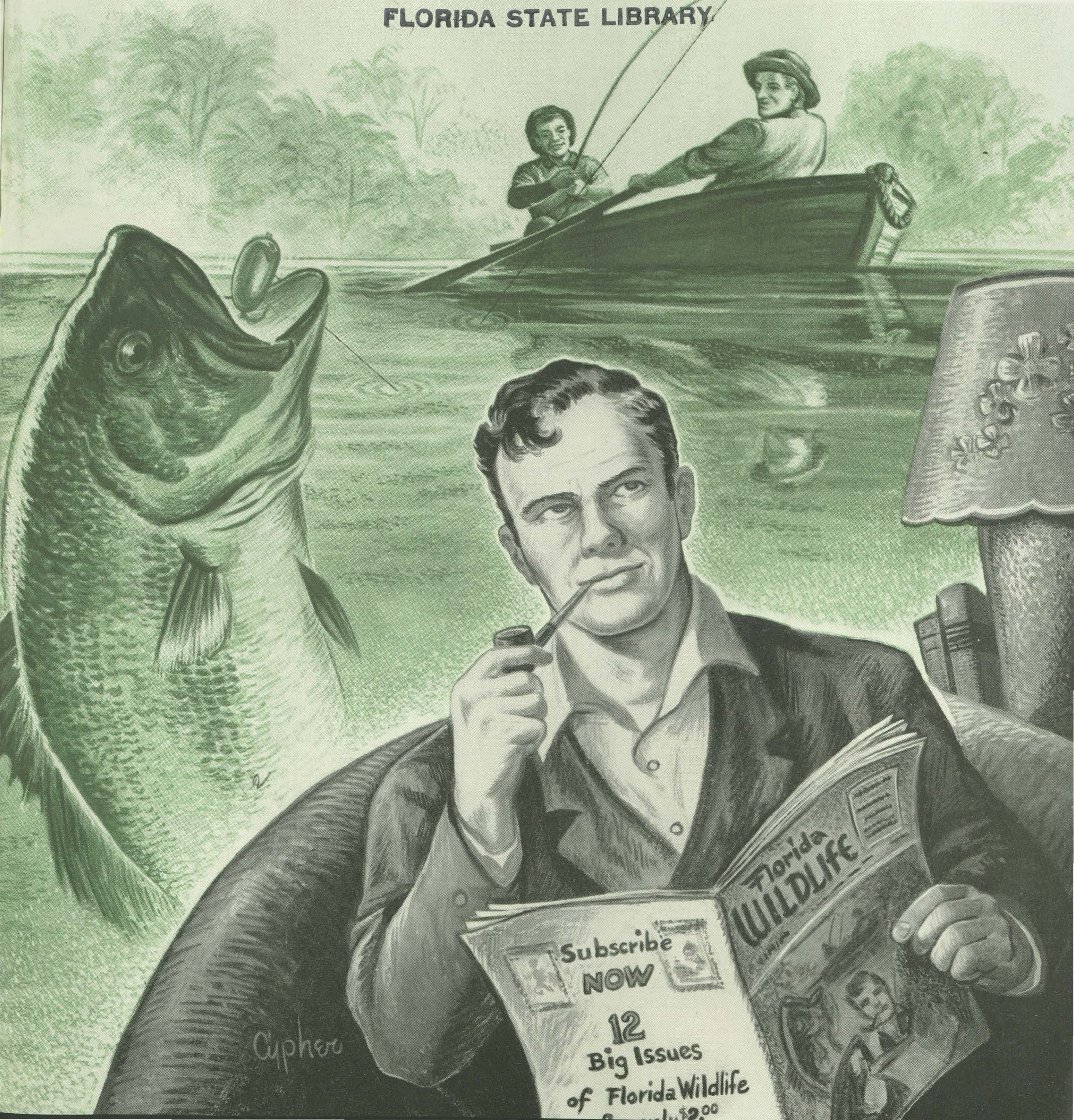


FLORIDA WILDLIFE'S

Fishing Citation

"for that BIG ONE that DIDN'T get away"

ELIGIBILITY REQUIREMENTS

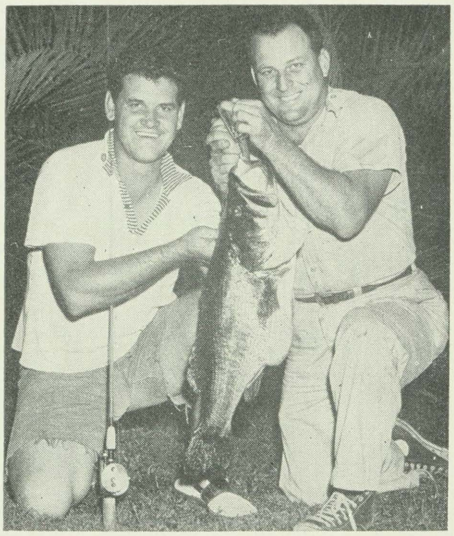
All fish must be taken from the fresh waters of the state of Florida, as defined by the Game and Fresh Water Fish Commission. Fish must be caught on conventional fly, spinning, or bait-casting tackle, with artificial or live bait, in the presence of at least one witness.

The catch must be weighed and recorded at a fishing camp or tackle store within the state by the owner, manager, or an authorized agent of the respective establishment.

Application for a Florida Wildlife Fishing Citation must be made within 10 days of the date fish was caught. Application must be made on the prescribed form as shown on this page. (Requests for additional forms should be addressed to: Florida Wildlife, Game & Fresh Water Fish Commission, Tallahassee, Florida.)

Citation, showing recorded data of the catch, will be mailed to the applicant upon receipt of application form that has been properly filled out and signed.

The receipt of any and all photographs pertaining to the registered catch, including the applicant and the fish, will be appreciated by the editor for use in Florida Wildlife Magazine.



Florida Wildlife Fishing Citations are available without charge, to any and all subscribers to Florida Wildlife Magazine, and their immediate families, who catch any of the following fresh-water game fish of the prescribed size requirements:

SPECIES	
LARGEMOUTH BASS	8 pounds or larger
CHAIN PICKEREL	4 pounds or larger
BLUEGILL (BREAM)	1 pound or larger
SHELLCRACKER	2 pounds or larger
BLACK CRAPPIE	2 pounds or larger
RED BREAST	1 ½ pounds or larger

CUT OUT AND SAVE THIS APPLICATION BLANK

APPLICATION FOR FLORIDA WILDLIFE FISHING CITATION

The Editor, FLORIDA WILDLIFE Date____________
Game & Fresh Water Fish Commission, Tallahassee, Fla.

Please send me the Florida Wildlife Fishing Citation with the inscribed data listed below:

Name____________ Address____________

Species of Fish____________ Weight________ Length________

Type of Tackle, Bait Used____________

Where Caught____________ Date________

Catch Witnessed by____________

Registered, Weighed by____________ at____________

____
(Signature of Applicant)

Florida WILDLIFE

VOLUME 10, NO. 2

JULY, 1956

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Published monthly by the
FLORIDA GAME AND FRESH WATER FISH COMMISSION
Tallahassee, Florida

★

**Dedicated to the
Conservation, Restoration, Protection of Our Game and Fish**

★

BILL HANSEN, Editor

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STRIKES and Backlashes

FISH WASTE

Gentlemen:

An article appeared in the Florida Guide Issue of the *Salt Water Sportsman* under the heading of Florida Salt Water Laws, which is of much interest and is probably unknown to a majority of Florida as well as other anglers. This article in part is as follows:

"In Florida, no food fish may be kept which the angles does not intend to use. Any fisherman not using any of such fish because of size or other reasons, shall immediately release and return such fish alive to the water from which taken and no such fish may be placed or deposited on any bank, shore, beach or other place out of the water."

I suggest that the above be reprinted in an early issue of *Florida Wildlife* and effort be made that the public be made aware of the needless waste of fish.

In connection with the above it has been repeatedly noticed that this practice is widespread on Walker Bridge which crosses the Ochlockonee River south of Panacea. New "catwalks" were recently installed on this bridge for the safety and convenience of anglers. I recently noticed a pile of 17 catfish in one place swarming with flies and maggots, on the catwalk. At other times I have seen small trout and even flounders left to rot. Frequently stingarees and crabs are scattered about the bridge also. Some of the catfish seen were the topsail cat or schoonerig, which is an excellent foodfish.

If the public was made to realize the seriousness of the above from a conservation standpoint and also the fact that leaving fish, broken bottles, tin cans, etc. on the right of way is unlawful and dangerous and could lead to a stoppage of fishing privileges from our bridges, it is believed that this practice would be reduced to a great extent.

C. L. Dawson
Crawfordville, Fla.

FARMERS AND WILDLIFE

Dear Editor:

All farmers should be interested in wildlife. We have been cooperating in all types of conservation. We don't bait birds, but we do grow grain in special fenced plots on our pasture and leave it to mature for the birds and also to re-seed itself. A little extra work on the farms and game would be plentiful again.

It would also be the same with fish. We cooperate and go by the plan of stocking our ponds. Without rain we plan to aerate the pond with sprinklers in order to give the fish more oxygen. Our opinion is that without rain fish use up the oxygen in still waters and do not propagate.

Carl H. Galloway
Winter Park, Florida

SCOUTING AID

Dear Sirs:

Florida Wildlife is one of the best magazines I have ever found for use with scouting. I am scoutmaster of Troop 38 in Fort Myers and we look forward to each issue with pleasure.

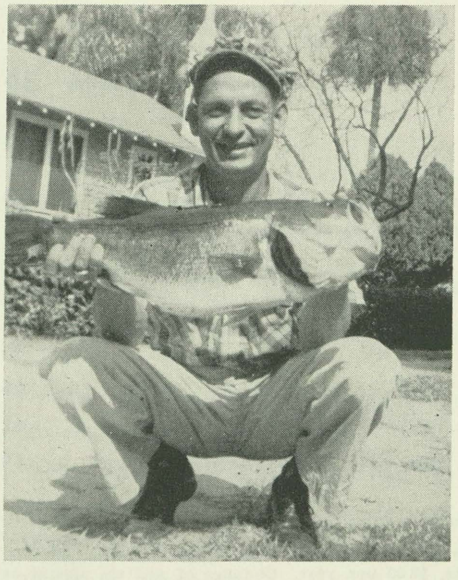
I would appreciate particulars on starting a Junior Conservation Club in my troop. The subject was discussed with my Junior Leaders Council and they are all for it.

William Watkins
Tice, Florida

WADING FOR BASS

Gentlemen:

Enclosed is a picture of a bass caught while wade fishing. Although most of my fishing is done with flyrod, I have recently been catching large bass on spinning tackle using the Black Eel Bait.



I look forward to receiving *Florida Wildlife* each month, thanks to a friend who sent me a gift subscription. You can rest assured that I am now a permanent subscriber.

R. H. Van Driver
Daytona Beach, Florida

SNAKES AND BASS

Gentlemen:

In reading the June *Florida Wildlife* I note that a pamphlet is available on a variety of subjects of interest to the field fraternity.

I find two that would be of definite interest to me, "Identifying Florida Bass" and "Snakes Can Kill." I am a regular "Damnyankee" subscriber to your fine publication which I note has increased its coverage quite a considerable amount in the past couple of years.

I would be very grateful if you would send along the pamphlets mentioned above.

Jay S. Kennedy
Michigan Center, Michigan

WATER DISAPPEARING

Gentlemen:

Enclosed please find my check for my subscription to your magazine for the next year.

In the same breath I would like to discuss a situation that was mentioned in the April issue of *Florida Wildlife.*

My father retired in 1931 and moved to Clermont, Florida with my mother. I made my first visit there in 1937 and have been going to this area once or twice a year since then. Being an avid bass fisherman, the territory around Clermont was the answer to a bass fisherman's prayer. About 1949 several of my brother officers got tired of hearing me brag about the Lake County bass and insisted on being taken there so they could find out for themselves. They did, and we have been making our spring trip down to our "second home" every year since then.

From the above quick resume, you may well understand that I have seen the south Lake County area grow from swamps, lakes and jungles to acres and acres of orange groves, and the orange growing progress from small owners to "Big Business."

Now we come to the question at hand. These large grove owners are constantly closing more and more lakes to fishing which we feel is a gross injustice to the fishing public and it is our belief that it is high time the State of Florida took steps to either limit the amount of water these groves can close in or limit the size of the lakes they can close or force them to allow access to the lake surrounded by their groves.

We have heard various discussions along this line, that they cannot close lakes over a certain acreage and also that they cannot keep you off a section line. We certainly would like to see this matter discussed in future articles in *Florida Wildlife* also the authority, if any, of the above statement being true.

We hate to see our fishing grounds being reduced so rapidly as these spring bass fishing trips are a ritual with us and we live from March until March until we are back down in the Clermont area.

Fortunately we are still catching sufficient fish to satisfy our desires, but we wonder how much longer it can go on before our various lakes are completely closed to us.

This year's trip was somewhat heartbreaking for us to see how low the various lakes are and even up here we watch the papers and weather reports closely hoping that Florida will get some much needed rain. Incidently we caught approximately 90 bass in our two weeks trip this April, even though we did buck a lot of wind. We still have no complaint about poor fishing, except that we cannot get into some of the water we used to fish in years past.

Well, so much for that. Awaiting some further discussion on this problem we are

Herbert J. Schroedel, Sgt.
Edward Baloga, Sgt.
Clarence Triska, Lt.
Chester Kluzik, Lt.
Bernard Schweter, Sgt.
Police Department,
Cleveland, Ohio

OKEECHOBEE FISH

Dear Editor:

The enclosed picture is of Sam Gray, Conservation Aid of the U. S. Department of Agriculture in Okeechobee.

The pictured fish were caught on live minnows in April with the bass weighing 10¾ pounds and the catfish 28 pounds, 5 ounces.

W. B. Hollinger
Vero Beach, Florida

BOAT RAMPS

Gentlemen:

Enclosed please find my check for renewal of *Florida Wildlife*. I enjoy it too much to miss any of it. More stories by such as Phil Francis and Chuck Schilling.

A month ago I retired after thirty years in the Military. Docs said get a trailer instead of tossing around my 110-pound cartop boat. Only trouble now, nobody makes any places where I can get a trailer into the canals. I understand that Flood Control money is allotted for the triple purpose of flood control, drainage, AND RECREATION. For my part of it, I'd like a few boat ramps on the canal. Certainly it would not cost more than a few dollars to put in a ramp once in a while suitable for launching a trailered boat. With the outboard boat popularity growing as it is, such things would greatly increase the popularity of the area. There are still a few of us who haven't given up in disgust because there are so many gar and mudfish and so few bass. Maybe some day we'll get the electric shocking device up from the Tamiami Canal and kill off a few hundred tons of our rough fish.

Who topped off the pines opposite Slim's Fish Camp at Belle Glade and left the tops for a fire trap and to ruin the boat landings?

You boys are doing a wonderful job with the magazine. Keep up the good work.

C. G. H. Metcalf
West Palm Beach, Florida

OREGON DEER RECORD

Dear Sirs:

We were fortunate to have your *Florida Wildlife* magazine sent to us for two years We enjoy it very much.

In the May issue I read a letter "Turkey Record." I too have a story I'd like to see in *Florida Wildlife*. It's called "Deer Record."

Last October my husband and our two sons went on their annual hunting trip. On their way in to the camp spot they saw several deer. The oldest son came running up and said, "Dad, let me have your gun, quickly!"

He fired and they saw a doe go down. When they got to it, there was a buck lying there too. So, the one shot got both deer. Quite a feat, eh? Dad said, "If I hadn't seen it myself I would hardly have believed it was possible."

This hunt was in Eastern Oregon.

Mrs. R. S. Welby
Portland, Oregon

HOE CAKE RECIPE

Dear Editor:

I can't let that ex-Kentuckian's recipe for hoe cake get by. Whoever heard of any real Kentuckian – or any Southerner, for that matter—using *yellow* corn meal.

Here is my recipe for hoecake.

1 pint white corn meal (water ground)
½ teaspoon salt
1 or 2 teaspoons bacon grease or melted lard.

Scald with sufficient hot water to form into a nice cake that pats out into a rather thin cake to fit the griddle.

Have iron griddle well greased and hot.

Bake over a moderate heat until nicely browned and crisp (about 15 minutes) on one side. Repeat on other side. Cut pie shaped and slather with butter. Yum! yum!

Made a trifle stiffer this same recipe will answer for pones to be baked in oven.

For any kind of corn bread—no sugar, no flour.

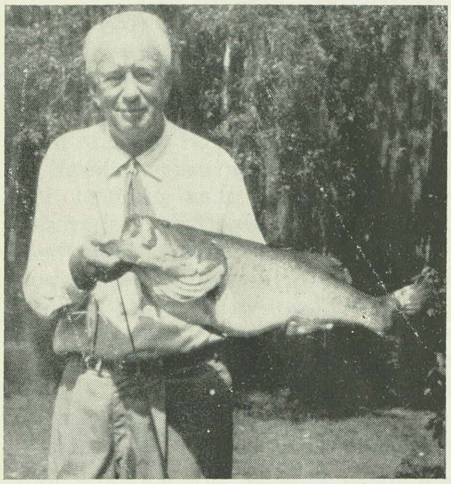
Eggbread takes buttermilk and soda.

Katherine C. Tabb
Miami, Florida

BIG BASS RELEASE

Dear Editor:

Here is a little conservation story that might be of interest. The enclosed picture shows a 12 - pound, 7 - ounce bass that I caught and returned to the lake with the thought that another fisherman might also thrill to a fight by hooking a big fish.



Of course, many big ones like this are mounted and I have a 19-pound, 9-ounce largemouth and a 14-pound, 7-ounce smallmouth hanging where all can see. The Game Commission authenticated the smallmouth bass in 1941. It had been stocked in 1927 by an exchange of fingerlings with Michigan. I get a kick when *Field and Stream* brags about an eleven pounder.

Kenneth Curtis
Lake Wales, Florida

TRIAL RUN OVER

Dear Sirs:

We have liked our six months trial subscription so much we are enclosing a check for a three-year renewal.

That story about Old Bob and Gwendolyn was super we thought, and all the articles are worth anyone's time to just sit down, relax and read.

Mr. and Mrs. R. J. Brown
Fort Myers, Florida

JUNIOR CONSERVATIONIST

By DENVER STE. CLAIRE

As I WRITE this column during the end of May for the July issue, I realize that by the time July rolls around that you will either have attended the Junior Conservation Camp or will be planning to spend a week of fun and outdoors with us.

The weeks scheduled so far at this writing (May) have been set aside as follows:

Girls' Week—June 10-16
5th Annual Conference Week—June 17-23
Boys Ages 13-18 Week—June 24-30
Boys Ages 8-12 Week—July1-7

That's as far as we have scheduled because we want each week to have a full complement of at least 75 members and a maximum of 100. If our registrations for camp reservations keep up as they have been these past few weeks, there is a possibility that we will operate perhaps another three to four weeks. It all depends on you members and other interested youngsters.

Those of you who have attended camp the past four years will remember our cook, Mr. Angus Kemp. He will be back with us again this year. I know that all of you will be happy to hear that; so many of you gained so much weight with Mr. Kemp doing the honors in the galley.

AND HERE IS GOOD NEWS:

A grant-in-aid of $1,134.06 has been received by the Junior Conservation Camp Construction Fund from the National Wildlife Federation and the Florida Wildlife Federation. Breakdown of the figures are as follows: $850.55 from the national organization with matching funds of $283.51 from the Florida Wildlife Federation.

The request for a grant-in-aid from the National Wildlife Federation was approved by the State Federation at Daytona Beach in October.

Dr. H. R. Wilber, DeLand, and Sam DuBon, Miami, represented the state organization at the National Wildlife Federation convention in New Orleans in March, 1956. The grant-in-aid was then approved by the National Federation.

Fred W. Gill, Zephyrhills, treasurer of the Florida Wildlife Federation, transmitted the matching funds to the Junior Camp Fund.

I am certain that I can say a big "Thank you" from all of you young people out there who are interested in the welfare of our enterprise to Dr. Wilber and Sam DuBon and all those who helped to make this posible. We accept it with deep humility.

SOMETHING NEW HAS BEEN ADDED

The camp is starting off right this year with its very own mascot. Yes, we have a brand new little fawn. The little buck is about four weeks old at this writing, and still nursing very well on his bottle. Look for him when you come to camp. Perhaps we can have a name contest, and have all of you attending camp this year submit a name for the little orphan.

LEAGUE DUES

July 1, 1956, is the beginning of another fiscal year, and is the time for you to check with your club and see if dues are paid or if they are in the arrears. For your information, I will list the clubs that are paid and who are members of the Junior Conservation Club League:

Junior Anglers Club of Ft. Lauderdale
Allapattah Optimist Junior Conservation Club, Miami
Dean Mather Junior Wildlife Club, Ocala
Archbishop Curley High Junior Conservation Club, Miami
Bartow Junior Conservation Club
Bay County Girls Junior Conservation Club, Panama City
Everglades Junior Conservation Squadron, Hialeah
Eustis Junior Conservation Club
Hollywood Junior Conservation Club
Leon Junior Conservation Club, Tallahassee
Orlando Optimist Junior Conservation club
Pahokee Junior Conservation Club
Stuart Junior Conservation Club
St. Petersburg Junior Rod and Gun Club
Leesburg Junior Conservation Club
Shady Grove Junior Conservation Club
Dean Mather Girls Junior Conservation Club, Ocala

We are wondering about Ft. Pierce, Gulf Breeze, Pensacola, Clearwater and Lakeland. These clubs have been active but we have not heard too much from them. Clearwater and Pensacola have just been reactivated, however. So, club officers, please check into your treasury and see what your status is. The dues are .25 per capita for every member. That means ages eight through eighteen.

AROUND THE STATE

Eustis

Tommy Anderson, over in Eustis, writes and tells us that the Club which he sponsors is going along in great fashion and that the club hopes to be in the thick of things very soon. That sounds like a warning, fellows. Let's be on our toes. All of us wish the club every success, however. And many thanks to a swell person by the name of Tommy who believes wholeheartedly in the Conservation Education program. Hats off to you.

Clearwater

To the Optimists over in Clearwater, we send a great big thank you for some wonderful cooperation. There isn't any doubt in my mind that the club will be well on its way in no time. And speaking of Clearwater, I would like to thank Mr. Pfost, Principal of the Clearwater Junior High School, for his deep understanding and sincere enthusiasm.

Shady Grove

Eleven young members of the Shady Grove Junior Conservation Club outside of Perry, Florida, spent an enjoyable week-end at camp April 28 and 29. Mr. Allen Powell, principal of the school, was assisted by Wildlife Officer Mack Cook and Julian Barrs. While visiting the campsite, they found time to visit Silver Springs, Salt Springs, Juniper Springs and Silver Glen Springs. One of the most delightful experiences the young group had was the twenty-five mile trip along the St. Johns River.

Lakeland

On May 1, I was invited to attend a meeting of the Lakeland Club. I was very impressed with the young group for they have been doing a bang-up job over there. Only we hadn't heard from them—no reports. Anyhow, the meeting brought out that they are working very closely with the State Forestry Service in that area. In fact, they have taken money from their treasury and have purchased fire-fighting equipment and are now on call for brush fires and other fires outside of the city limits. It's a wonderful idea, and shows an avid interest in really helping conservation. Saving our forests and timber is REAL CONSERVATION. They are really doing something constructive. More power to you Lakeland members. Keep up the excellent work. But please let me know what goes on. Send me a report from your meetings.

Williston

Last Thursday (May 15) I spoke before the Lion's Club of Williston. They are very interested in organizing a club over in Williston. Perhaps this fall they will initiate the idea and organize a club of their own. In the meantime, they intend to send some young campers to our campsite.

Ocala

The Girls Junior Conservation Club affiliated with the Dean Mather group have elected their officers which are as follows:

Director: Lillie Buchanan
Secretary: Juanita DeBarry
Assistant Secretary: Paulette Irwin
Sgt.-At-Arms: Sonya Poole

Return of camping questionnaires to all Junior Conservation Club members who attended the 1955 session. Out of the approximate *189* questionnaires sent out, *120* questionnaires were returned. Answers were as follows: *(It must be remembered that all campers did not answer all questions.)*

1. On the whole did you enjoy your week at the Junior Conservation Camp? Yes 111, No 5, Yes and No 1.
2. In general, the accommodations were? Excellent 46, Good 60, Fair 11, Poor 3.
3. Do you think the Lectures were? Excellent 68, Good 43, Fair 7.
4. Did you have enough free time to do as you wished? Yes 91, No 28.
5. Did you like the Counselors who worked at Camp this summer? Yes 108, No 9, Some 1.
6. Did you like having a Junior Counselor in your cabin? Yes 109, No 7.
7. Did you like your particular Junior Counselor? Yes 108, No 7.
8. From your point of view was discipline? Fair 110, Unfair 8.
9. Do you believe that all rules concerning Camp attendance were? Fair 112, Unfair 5.
10. Did you feel that you had a sufficient amount of food to eat? Yes 115, No 2.
11. Did you like the type of food which was served you? Yes 112, No 6.
12. Was the food which was served to you cooked to your satisfaction? Yes 116, No 3.
13. Did you have enough time to swim, fish and go boating? Yes 83, No 24.
14. If you are qualified, would you like one overnight camping trip away from the Headquarters area? Yes 116, No 4.
15. Do you like to participate in team sports? Yes 113, No 6 .
16. Was the particular team sport which you enjoy the most, played at Camp? Yes 70, No 49.
17. If not, please write in the name of the team sport you like best: Football 25, Basketball 13. Also various others were named among which Baseball took a definite back seat to the above.
18. Do you think that you spent enough times in taking Nature Hikes? Yes 55, No 61.
19. Are you interested in coming to Camp this next summer? Yes 110, No 9.

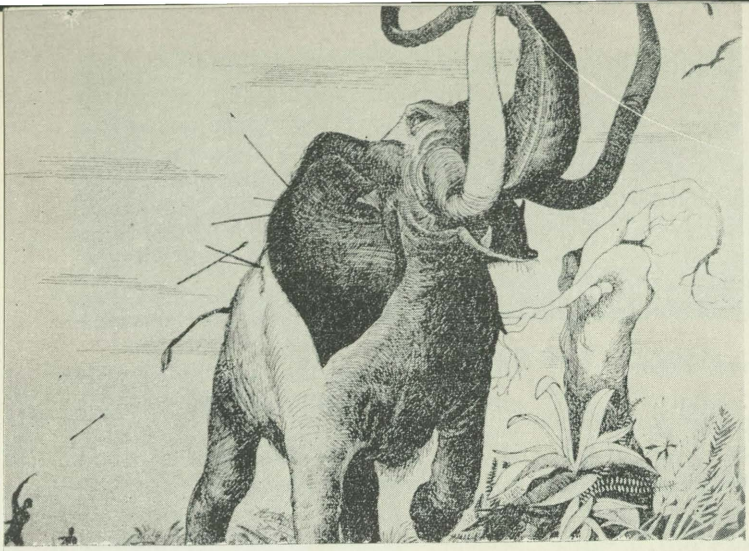
Observations: It may be observed from the above that since approximately 64 percent of the questionnaires were returned, and in view of the indicative answers, that the CAMP SESSION of 1955 was successful. As with any group of people, there was a certain amount of discontent and this, of course, shows up in the answers but not to an extent that it was alarming in any respect.

Since the questionnaires were sent only to Junior Conservation Club members, it is impossible to analyze to what extent it was successful among the non-club members. This will be possible to judge only when we receive the final total of applications to attend next year's Camp Session. However, it is to be expected that with the raised Camp Fee of $15.00 for non-club members (club members $7.50) that it will be impossible to get a true picture of this also. END

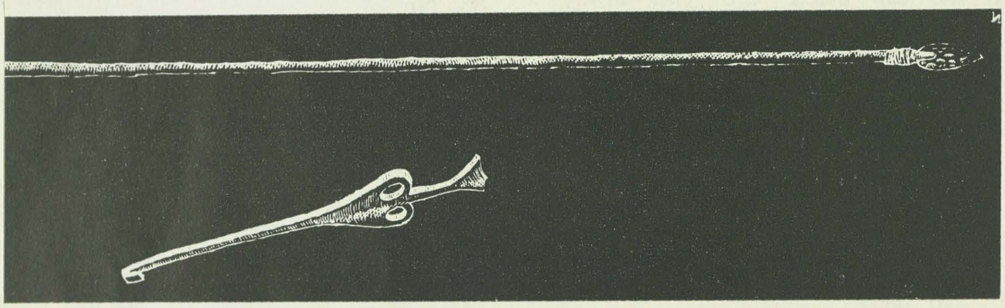
Denver Ste. Claire, Supervisor, Youth Education (center) explains merit system to officers of the Shady Grove Junior Conservation Club at the Shady Grove School. Left to right: Ted Howell, Udell Wilson, Ste. Claire, Cecil Blanton, and Clyde Andrews. Photo by Ralph Voss.

20,000 Years of Hunting and Fishing

By
DR HALE G. SMITH



When the Indian first arrived in Florida thousands of years ago, he found some animals that are now extinct. There are indications that the elephant-like mastadon was hunted into oblivion by the early peoples whose most formidible weapon was the atlatl or throwing stick (below).



IN A SHORT SPAN of ten years, Florida has undergone a face-lifting. Whether or not the change has been for the better is a moot question depending upon the individual point of view, but change it has. Housing projects have encompassed what but a short time ago were cow pastures and pine ridges, marshes and swamps have been drained by a network of canals, lakes have come into being where none existed before, former timber lands have been converted into pasture. All this activity has reflected upon the numbers and distribution of plants and a variety of animal forms. But change is nothing new to the Sunshine State; man and nature combined have been working to alter Florida's landscape for at least 10,000 years.

Archaeologists are the modern detectives who seek to piece together the clues which will at least partially draw aside the misty curtain of the past which veils the story of the rise and decline of now vanished cultures. Their probings reveal much of history of peoples who had a more direct and concrete dependency upon the resources of the primal peninsula. They are learning something about how men sought to alter natural conditions, or adapted himself to those conditions over which he had no influence whatever.

Many of the places where lived the early Floridians were occupied for hundreds, even thousands of years. It is of interest to note that the centers of population in the state during the present are much the same as those during prehistoric times. One reason for this is that the Europeans first moved in where the Indians had already settled due to the advantages of the area. Most of these were located aboot the mouths of rivers where there was an abundance of wildlife upon which they depended for sustenance and because of the good harbors in such locations.

When the Indian first arrived in Florida thousands of years ago, he found some animals that are now extinct—the elephant-like mastadon, an early type of horse, the camel, and the giant sloth. There are indications that some animals, the mastadon for example, became extinct because men hunted them out. We know that these ice age animals had traveled the pathway to oblivion by about 2000 B. C. Since there is little indication of major climatic and environmental changes in Florida since this early time, the evidence seems to point to the possibility that the presence of man in the state might have been a major factor in their disappearance.

For hunting the larger animals, the Indians used a throwing stick and spear. With the throwing stick the Indians were able to fling a spear with great force, great enough to penetrate the tough, thick hide of animals as large as a mastadon. This spear throwing device was simply a two foot long stick with a handle on one end and a hook against which the spear was placed at the other.

The remains of a now extinct flightless bird, the great auk, were found in an Indian village located near Ormand, Florida. This village was ocupied about two thousand years ago. The finding of bones of this species presents something of a mystery. All other finds of great auk remains have been limited to the northeastern states. How did this flightless bird get to Florida? It is doubtful that it walked. Since there was little, if any contact between the Indians of New England and those of Florida, they probably did not bring or trade it in. Possibly the natural range of the bird was more extensive at this early date than we formerly believed.

Many of the Indian village sites, especially on the west coast of Florida, are now under several feet of water while still others are daily being eroded away

Primitive cooking and leather making as practiced by the original Floridians is illustrated in the old print reproduced above.

by the ocean. Two or more factors are involved here. We know that in the last few thousand years, the sea level has constantly risen. Combined with this, on the Gulf side, the coastal area has been and still is being eroded by the water. Many ancient village sites dating to prehistoric times have been destroyed by the erosive action of the waves.

A rise in sea level caused a shifting of the Indian population, many of which depended to a great extent upon the oyster as the mainstay of the diet. Oysters are very sensitive to changes in the salt content of water; as salt water gradually crept up the lagoons and rivers, the oyster beds moved and so did the people. Also, at a relatively late time there was a gradual movement caused by their villages being "cut out" from under them.

Man's activities have also affected the oyster beds of the state. With intensive agriculture development and the resultant erosion during heavy rains, many tons of silt have been carried down the rivers and into oyster beds, destroying them.

The coastal Indians from about 2000 B. C. until the coming of the Europeans, used oysters and other shellfish as a major part of their diet. The Apalachee Indians traded smoked oysters obtained from Wakulla County oyster beds with inland Indian groups in Georgia. Many of the early roads of Florida were made from shells obtained from old Indian villages. Some of the shell mounds were over forty feet high and covered several acres in extent. Many of the areas that at one time yielded many shellfish are now many miles away from oyster beds.

The coquina shellfish were used extensively in some places by the Indians. At one prehistoric Indian village that was occupied about 3000 years ago, the coquina shell was found to be twelve feet deep and covered two or three acres. At the present time this prehistoric village site is over a mile from the sea beach where these shells can be obtained, reflecting a drastic change in the coastline of that particular section.

When the mastadon and other early forms became extinct, the white-tailed deer became the principal source of meat for the Indians. After the coming of the Europeans, deerskins were one of the major trade items and thousands were sent to Europe.

It is recorded that the Indians of the Florida east coast around 1595 and some time before did a good deal of whale hunting. Their method of capturing the whales. which ocurred in great numbers along the coast, was to kill the animal with a stake and mallet. From their dugout canoes they would jump on the back of the whale and drive the stake into his spout. The stake driver left the whale and waited on shore until it suffocated and was washed up by the waves. Sometimes whales were herded into shoal water where they grounded themselves and were dispatched by the stake and mallet method. This same technique was used to kill the manatee or sea cow.

The Indians utilized the bones of fish and animals in many ways. The most common bone implements were arrowheads made from deer antler, split deer leg bones, sting ray barbs and sailfish bills. Many bone arrowheads were used on unfeathered shafts for shooting fish. Numbers of these points have been recovered from various Florida rivers and springs.

For working leather, the ancients made scrapers from fish jaws, deer antler and leg bones. Needles and awls were ground out of split deer leg bones. Deer antler was also used to make picks and adzes, while chisels and hammers were made out of mammals' leg bones.

Fish hooks ground out of bone were also used. In shape they are similar to modern steel hooks. With a white bone hook, fish could be caught without having to add bait; the whiteness of the bone acted as a lure.

Sharks' teeth were useful in making cutting tools. Often the Indians would set a row of the teeth in a piece of wood. This method also was used in making toothed war clubs, formidable weapons.

For sandpaper, the Indians employed the skin of the shark. This material was useful to rub a smooth surface on bows, dishes, spears, arrows and other

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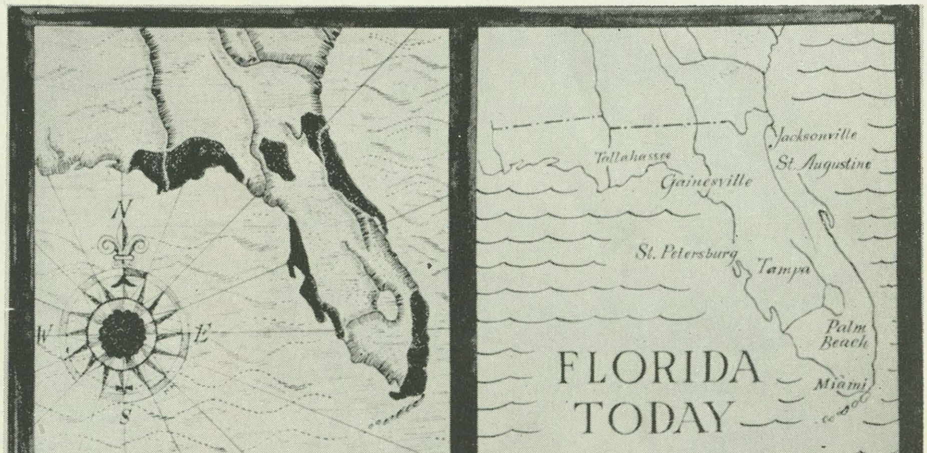
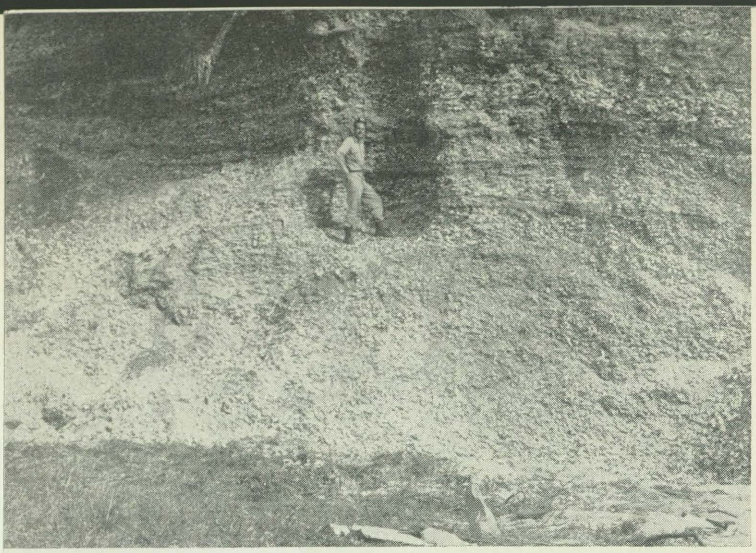
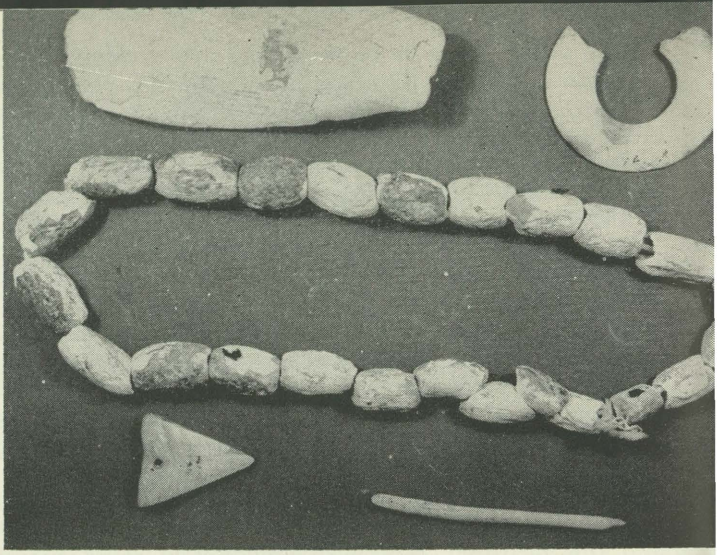


The present day centers of population in Florida follow closely the pattern of prehistoric population concentrations which are indicated by the shaded areas on the map of early Florida (left, above).



The shell mounds which mark many of the ancient Indian village sites yield clues to the cultures which rose, flourished, and then vanished from the Florida scene. In the photo above is shown a section of Green Mound in Volusia County.



Shells as well as bones of birds and mammals were useful raw materials from which the Indians made ornaments and tools of various kinds.

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wooden articles.

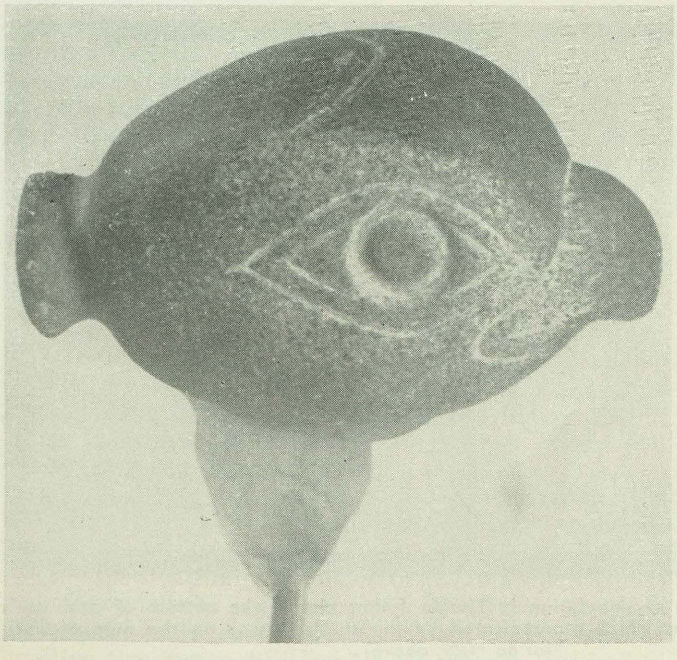
The Indians made ornaments of bone. Fish vertebra were often made into beads. Long hollow beads were yielded by bird bones cut into inch long segments. Alligator teeth were also valued as beads, as were certain sea shells such as the olive shell. Long bone hairpins were ground out of deer bone or long bird bones. Circular breast pendants were made from welk and other large conch shells. Sometimes the central section of the shell was also ground to form a pendant.

Turtle shells made rattles, one of the tribal medicine man's stocks in trade. The shells, with hard seeds or pebbles placed inside, were mounted on a wooden handle. Such rattles, along with bird bone whistles, were used to accompany songs and dances.

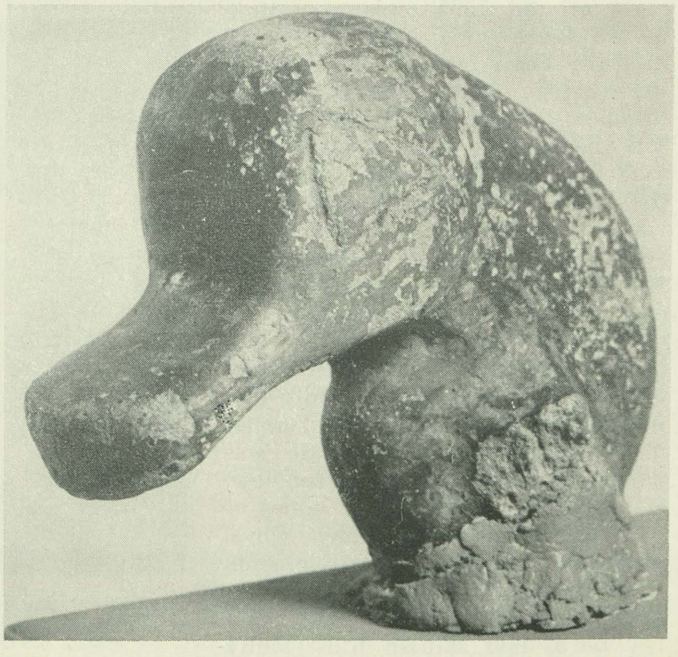
An important foodplant, Zamia, also known as contie, appears to have been introduced to Florida by the Indians from a tropical West Indian environment. The Indians made a flour from the roots, first grating them then leaching with hot water to remove the poisonous hydrocyanic acid.

Tracing back the history of the use of Zamia, we learn that in relatively recent times—during the late 1800's and early 1900's—the plant was commercially cultivated for food processing plants located on the shores of Biscayne Bay and the Miami River. The value of the flour at that time lay mainly in the Key West and the West Indies trade. Some of it was packaged for use as a cheap face powder, but most of it was sold as human food. During this time and before, the Seminoles were selling Zamia to the white settlers of Florida. When the Seminoles were driven into the Everglades by the American army, contie assumed major importance as a source of food for the harried tribesmen. The soldiers who did not utilize the plant were forced to have all their goods shipped in, and therefore were not free to move about as were the Indians.

We do not know exactly how extensively Zamia was used by the Indians prior to the arrival of the Seminoles in the state. Some archaeologists believe it to have been a very important part of the earlier tribes' diet. We do know that when the Europeans



Indian stone carving representing the head of the now extinct Carolina parakeet. Weeden Island period.



Baked clay figurine representing the head and neck of a duck or goose. Ft. Walton cultural period.

came into Florida, contie was growing in abundance about the old village sites.

What is the importance of this plant to the archaeologist and how have recent changes affected it? The distribution of the various types of Zamia in Florida is, according to botanists, an unnatural one and suggests the Indians carried the plant from village to village as they moved about. The technique of flour manufacture is the same as that used in South America and the West Indies for the processing of manioc, the plant from which our tapioca is derived. This seems to indicate a prehistoric connection between the two areas. Shell from many Indian village locations has been removed for road building; since one of the species of Zamia flourished in and around shell mounds, the number of plants growing wild has been greatly reduced by this disturbance.

Bison were at one time present in Florida. Various historical acounts mention them in the eastern as well as the western portions of the state. In 1675, Bishop Calderon from Cuba visited the various missions in north Florida and reported the Timucua Indians hunted the bison in that locality. Torres de Ayala and Don Carlos do Siquenza y Congora tell of the presence of bison in west Florida in the territory of the Apalachee, Apalachicola and Pensacola tribes.

Bison became extinct in Florida by about 1750. The animals were never numerous here and probably did not move into Florida from the country to the northwest until about 1500 A. D. There is archaeological evidence to indicate that the bison did not cross the Mississippi river from the plains until a relatively late date, sometime around 1400 to 1450 A. D.

During the Spanish period in Florida, great peach orchards were present. The peach was introduced by the Spaniards and grew well in the new land. Archaeologists have found peach pits in their investigations of the early Spanish-Indian missions and plantations. In some of these places vast numbers of peach pits have been unearthed, indicating a bumper yield.

Citrus trees were also introduced into the state by the Spanish. Many of these trees were planted about their missions, forts, plantations, and towns. When the Spanish property was destroyed, the citrus escaped cultivation. The sour oranges were often eaten with honey. Citrus was grown in abundance north of Jacksonville prior to the big freeze of the 1890's.

Diseases also have effected various plants. For example, grapes were grown in vineyards in northwest Florida during the 1800's, but a plant disease eliminated them almost entirely. The Spanish introduced grape plants to Florida, and we know that the French who settled on Lafayette's landgrant in 1831 brought grapes with them to establish vineyards. However, all of these plants died out within a very few years.

Evidence of climatic change is reflected by early descriptions of the vegetation in various parts of Florida. William Bartram in 1773-74 noted royal palms growing in the St. John's area near Astor, Florida. Bartram also recorded that in some portions of central Florida there were vast stands of cane. In fact, he mentions riding miles through nearly solid cane thickets. About ten years ago native cane was a relatively scarce item and in the Tallahassee area was almost extinct. This resulted from the heavy utilization of the tender young shoots by cattle which roamed freely in pre-fencing days. Cane brakes were also cleared as man brought more and more land under cultivation.

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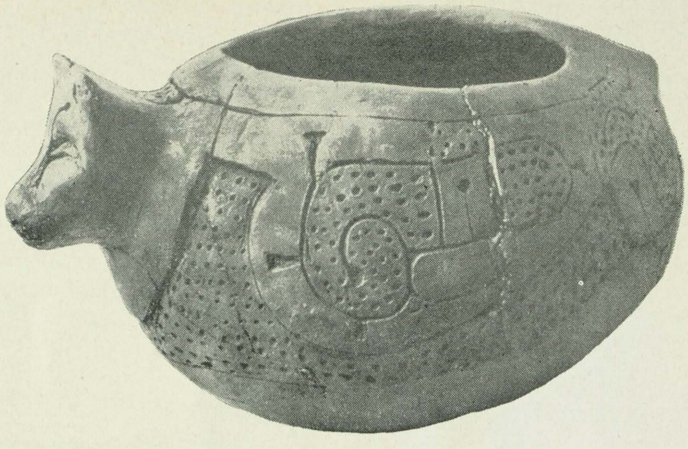
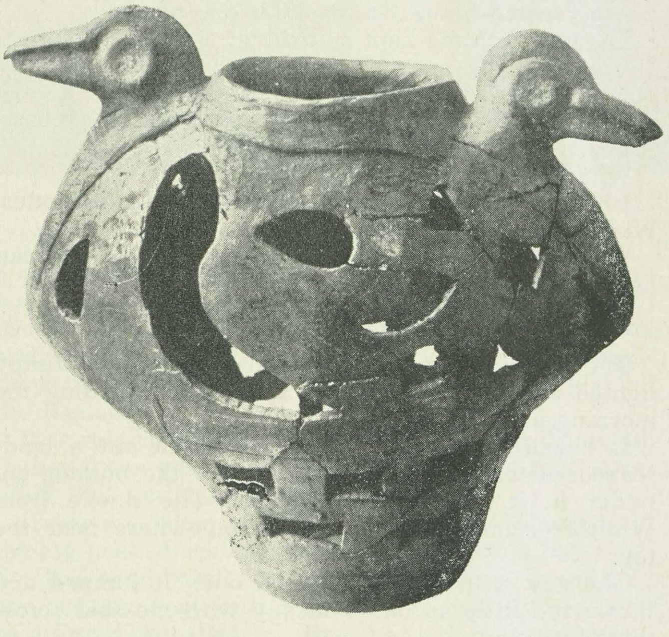
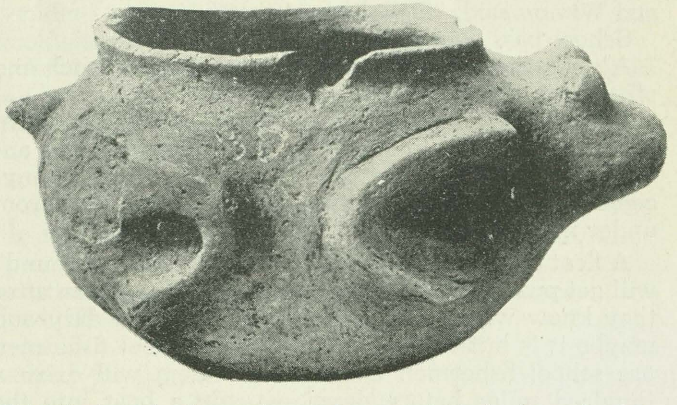


Various forms of wildlife served as the decorative motif for many objects of utility and adornment. The vessel above, dating from about 800 A. D., features a dog.



The Weeden Island cultural period ceramic vessel above features a pair of birds.



This Weeden Island ceramic vessel was made in the form of a frog.

Bass In Bunches

By CHARLES WATERMAN

WIMPY STEERMAN was in another boat about 30 yards away. He was alone except for a black and white bulldog and three or four bass.

The schooling fish were up and Wimpy looked like a piscatorial pinwheel. He was slamming his plug to all points of the compass and catching fish. Suddenly the striking fish went down and the St. Johns went smooth. Wimpy seated himself to wait for another rally.

The guy with me kept on fishing. When the strikers disappeared, he put on a bottom lure and carefully bumped it across a subterranean drop-off he has known about for years. In four or five casts, he caught a bass. A dozen casts and he caught another.

Wimpy watched idly but he didn't fish.

I heard a speedboat muttering in from Lake Dexter. Wimpy didn't even look around.

"That's Joe Caldwell," Wimp announced. "He can hear a bass hit from here to Lake Monroe."

It was Joe Caldwell.

"Hi, Joe," said Wimp.

The guy with me caught another bass and Wimpy lighted a cigar, leaned back and started reading the morning paper.

It began to rain and Wimpy brought out a landscaped shower curtain. When he and the bulldog got under it, it looked like a tepee. The smoke from Wimpy's cigar curled out from somewhere near the top.

The guy with me lost a good one. It jumped and threw the little spoon. The guy with me said something insulting.

The tepee didn't move but a muffled voice came out. "Whatsamatter? Did he get away?"

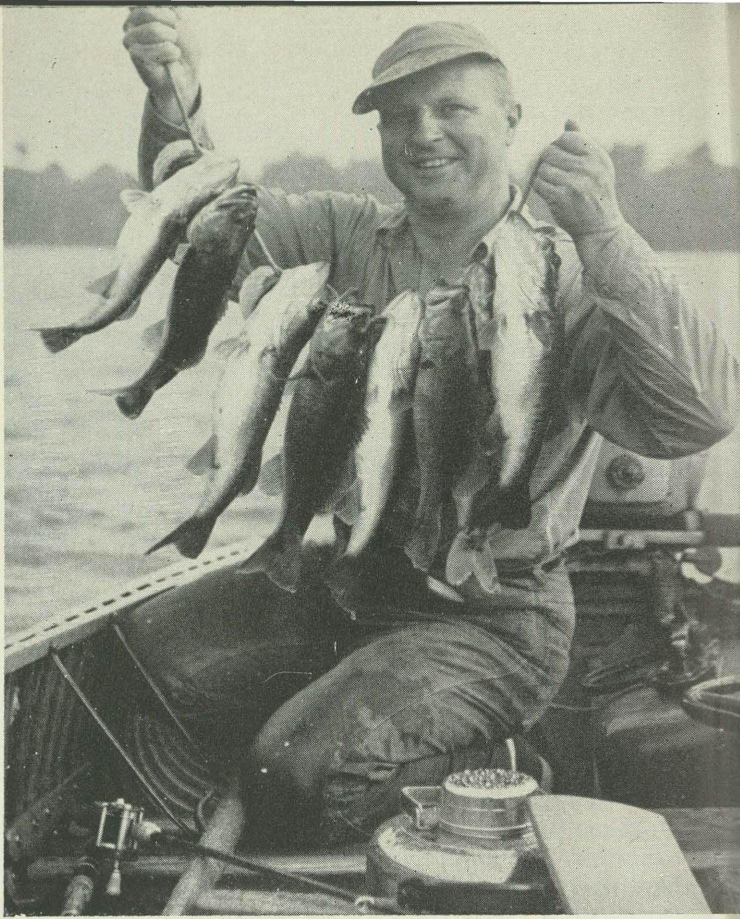
The rain continued and it must have been twenty minutes later that a single school bass thumped a single minnow on the surface. The tepee was gone and Wimpy's plug was on the spot before the droplets had stopped falling. The bulldog was standing on a seat and Wimpy said, "Boy, look at that!"

School bass fishermen get that way.

A real school bass fisherman would rather catch one off the top than a limit by any other method.

I guess school bass fishermen are made, not born. It took me a year to start catching jump bass and another year to really get the fever. I'm still a Johnny-come-lately and the experts catch them right out from under my nose.

A fleet of boats silently picketing a "striking ground" will get puzzled stares from Yankee anglers, even after they know what's going on. It looks pretty lazy and maybe it is but that's not the reason school fishermen are school fishermen and some of them will drive a hundred miles before dawn, wrestle a boat into the water and travel ten miles of river to sit and watch. A lot of those fellows are wizards at school bass psychology and would rather sit and figure why the fish don't strike than go catch bass by some other method.


Most school bass run about this size but a few whoppers are caught from schooling grounds every year.

It is harder to understand when you learn that school bass seldom run large and that in a country where 10-pounders are fairly common an old-timer will go into ecstasies over one that goes a bare pound-and-a-half. It's the same thing that causes fresh water trout fishermen to pass up spinner-hunting lunkers in order to catch 9-inchers on dry flies. It's a way of fishing.

They call them "school bass", "striking bass", "jump bass", "shoal bass", "bar bass" and "jumpers" in different areas. They're all about the same—black bass that have learned to school up salt water style because of bait that behaves like salt water bait. Most of the bait schools that attract school bass on the St. Johns are salt water minnows.

Florida is the real home of schooling black bass although the TVA lakes have them too, mixed in with white bass and similar species. The St. Johns schooling is best known because there's more of it.

You'll hear about "acres of striking bass" and "the whole river whipped to a froth" but you'll seldom see "rallies" like that. Usually it's three to thirty fish on top at once.

Catching them isn't as simple as it looks at first. Finally, when you begin to really cash in on school bass, it's the result of a lot of things you've learned at a time—things you aren't really aware of and probably can't describe very well.

You have to be able to cast pretty well. Deadly accuracy is a big help, whether you use baitcasting, spinning or fly tackle. When the fish are "coming up" over a large area, long range throwing is helpful but it can be more harm than aid if you don't use judgment.

Spinning is increasingly popular on schooling grounds, especially when the bait is small. Baitcasting is the old standby. Fly-fishing is not too popular because of the time usually required to get into action. In any event, light tackle is called for. Ten-pound test line is about right for the plug rod and 5-pound monofilament is a good choice for spinning.

It is competition that makes the schooling bass vulnerable. When four or five excited fish are after a single minnow they may be in a mood to hit everything that moves—and some things that don't move.

When a single fish has just gulped one big minnow the experts feel he's not apt to take a tardy lure that has landed in the splash. He's probably half way to the bottom with a smug look on his face. However, if another fish was right behind him and missed his lunch it's apt to be a good bet to throw at the single splashes anyway. For that matter, throw at everything that moves, even if it's a needlefish.

The perfect setup is a shower of minnows followed by a number of solidly striking fish, definitely moving in one direction. Throw just ahead of this skirmish line and retrieve slowly. If you don't catch a fish, I can probably think up some reason why you didn't.

Usually, the fish "pop" over a considerable area and seem to be going in no particular direction, even though the minnows were plainly visible and in good formation a moment earlier. The explanation is simply that the minnows scattered at the first strike. In this case, you throw where the action seems to be heaviest. Once you've retrieved past the busy zone, you reel in hurriedly and hope you can get in another cast before the rally is over. Some of the serious operators have two or three rods rigged up. When the lure gets out of the striking area, they leave it to shift for itself and grab another outfit.

I once noticed Bob Budd and Doc Wilber glaring at a likely spot with seven rod tips sticking out of their boat. If the initial cast hooked a fish, the operator would stick the busy rod between his knees and try with another.

With several fishermen throwing into the same spot from several boats, the resulting tangles can be extremely interesting and some of the heaviest strikes I have had came from other fishermen.

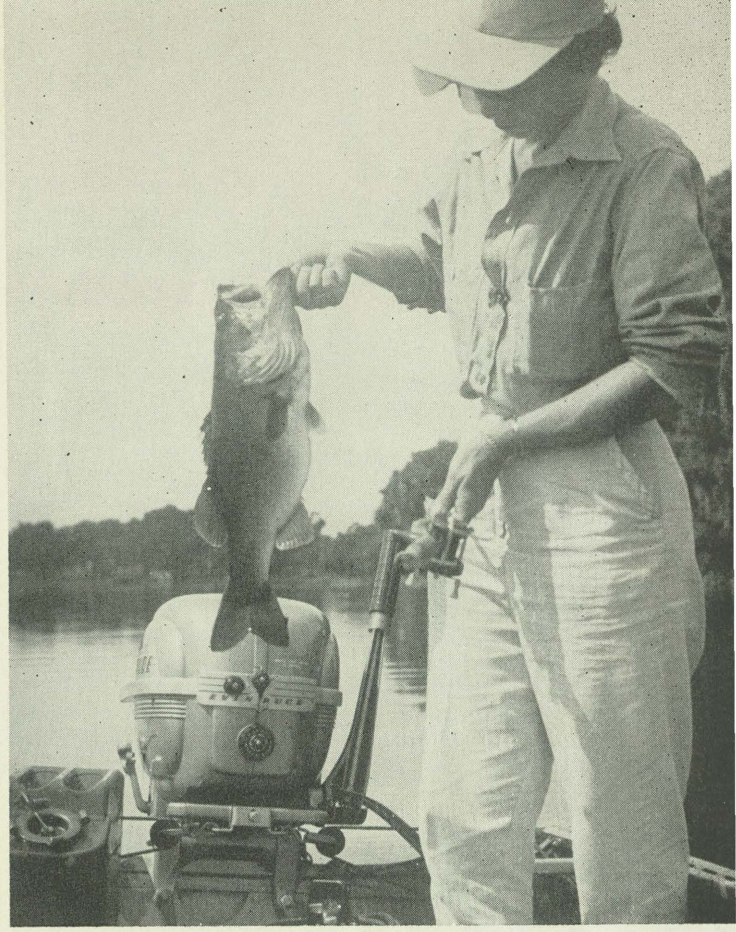
Using a flyrod, it is difficult to get into action for a brief rally but once you get the fly over them you can keep casting back to the same spot with a rapidity that puts other tackle to shame. I have tried two flyrods at once but would rather not discuss the matter.

How long does a rally last? Seldom more than a minute and usually less than twenty seconds. Sometimes they just keep hitting. In that case you'll either catch the limit quickly or have a nervous breakdown.

Sometimes you can watch the gentle ripple of a big school of bait working toward a spot where you know the fish are lying and can get all set. In this case you cast with the click on, have a monumental backlash or miss your mark by 30 feet.

You can be too quick on the trigger. If the fish have been coming up in goodly numbers and you cast the initial strike, you may be fishing on the edge of the real rally and find your lure moving through fishless water while the surface erupts a few feet away.

The lure problem is just that because schooling bass are notably inconsistent. The best bet is often a lure that is approximately the size and coloration of the bait. That is usually the first choice. However, gadgets that look and act like nothing that swims often have a popularity that may last for a year, only to give way before something entirely different. A lure that proves a killer for weeks may suddenly lose its charm and you can try it fruitlessly for years under conditions that seem exactly like those when you did all the damage.



A 4-pounder attracts a little extra attention.

It is seldom that school bass can't be caught at all. If they'll come up and hit, you'll be able to find something that will take a few.

However, when striking very small minnows in thickly packed schools, they can give you a bad time. I've had good results under such conditions by putting two or three very small streamers or cork-bodied bugs on a flyrod. My theory is that they are chasing several minnows at a time and are apt to prefer a "cluster" rather than a single lure.

The baitcaster or spin fisherman usually goes to a small trailer lure fastened behind a big plug or hookless casting weight. Such a trailer is hard to weild without practice, especially if you leave hooks on the big lure but sure as I take off the hooks, Grandpa wanders in with the youngsters and powders my hookless plug.

A large plug with trailer is not likely to scare striking fish as the bass that wants the little lure probably thinks the splash of the big one is simply another feeding fish. Monofilament is nearly always used for attaching the trailer.

When the larger schooling fish are after big bait, big torpedo plugs are often good medicine. Anything over two pounds is a good-sized school bass and the one that goes over six or seven pounds is unusual indeed. Most of the real lunkers caught on schooling grounds were probably simply lying under the strikers looking for banged-up bait or even the smaller school

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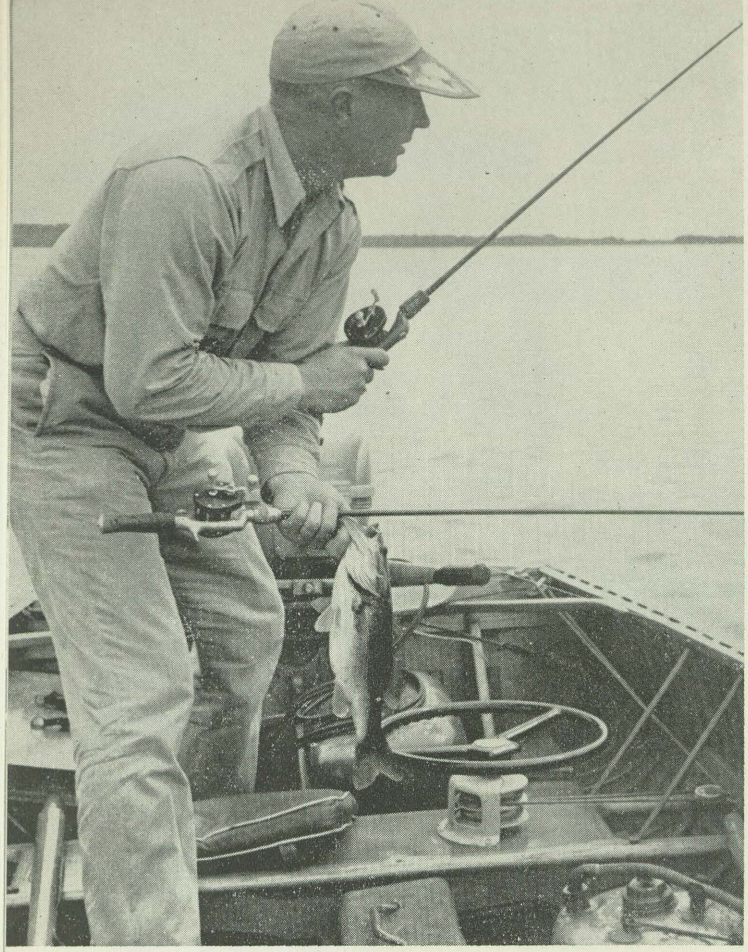


Many "jump" fishermen use two or more rods. Here the author picks up a spare without taking time to unhook a fish that took the previous cast.

(Continued from Preceding Page)

bass. Sometimes the big ones join in the fun, though, with gratifying surface explosions.

Successful school bass fishing is usually a fraternal proposition unless you have a great deal of free time for it. All of the good schooling spots are well known and it is usually by contact with your friends that you learn where the hot spots are at any given time. Friends can save you a lot of cruising.

Guide boats don't work the school grounds much because, no matter how experienced a visiting fisherman may be, it is unlikely that he will get going on schooling bass without a little practice.

At first, river schooling grounds seem haphazard but most of the localities fall into one of several categories. Many of them are located at the mouths of creeks, at the points where lakes join the main river and over bars that adjoin deep runs. Other areas that seem to have no distinguishing characteristics have bottom attractions that a diver might locate almost immediately.

"Catching them off the bottom" under a schooling area requires a knowledge of lure performance and bottom conformation. Some school fishermen love that kind of fishing and others won't even bother with it. It has been my experience that such angling is apt to be feast or famine. Most popular lures are small jigs and spoons and the fish are apt to be in very small areas.

Artificial eels have done good work in such locations.

It is considered perfectly fair to fool passing boats if you have the fish located but, once another angler stops, the early arrivals usually help him get located so he will have some fishing and won't "block the bait."

I've heard some sour remarks on striking grounds, usually by a newcomer who is asked to move from a given spot where the fish are known to be lying. If he "gets right over the fish", the fish may move and the minnows change their routes. He may end the day's fishing for all present.

I remember the time when, on one of my earliest school bass fishing expeditions, I was busily playing a bass when my partner told me to "sit down and quit fooling with that fish."

I sat down and pretended nothing was happening as a boatload of fishermen cruised slowly past looking for rising fish. Have you ever tried to look bored while a bass attempted to take you rod away from you? The passersby probably took my rod dipping for the work of the biggest of all live shiners. Anyway, they didn't stop.

The lakes that line the St. Johns are something else again. When bass are schooling in a lake they're apt to chase the minnows all over the blamed place. The approved method is to chase the bass. Then, before long some other fishermen will start chasing you.

Lake fishing for widely scattered and fast moving schools doesn't require much knowledge of the bottom or of last year's activities but it does place a premium on a fairly fast boat and constant vigilance. A pair of binoculars is invaluable and with good glasses you can spot a big rally half a mile away.

When you sight a school on a lake you have two methods of approach, both of which require a motor. I have a knack for choosing the wrong method pretty consistently.

The most obvious plan is to hurry to a spot a little out of casting range and then try to sneak up on the breaking fish with an idling motor or with oars. When I do this, they generally get through striking and submerge before I can start fishing.

The other way is to tear right up alongside and cut the engine with one hand while you make a hurried cast with the other. Your sudden arrival is likely to spook them but they may not leave until you've had a cast or two. However, bait and fish are almost certain to move away from you if you make a big fuss upon arrival whereas they might come right to you if you approach cautiously. If other boats are chasing the schools you have no choice and must stick to the high speed approach.

That type of fishing is much less popular than river fishing and it is guaranteed to make you feel like a jerk as you pursue a 2-pound bass with a 30 or 40-horsepower motor or an inboard launch. It gets to be a lot of fun, though, and you will find yourself giggling like a kid on Halloween as you take off for a distant splashing.

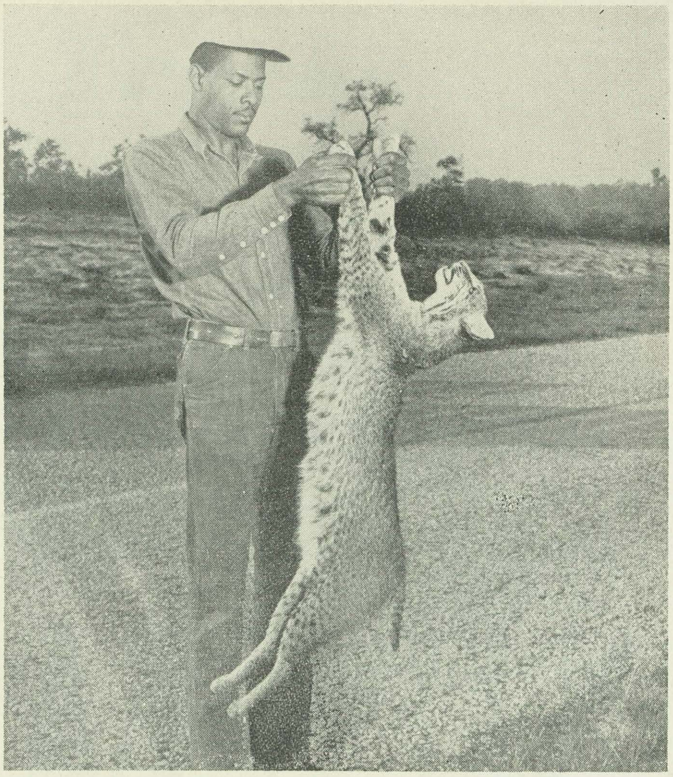
The other day a laughing resort operator on a lake near DeLand was telling me about the goofy gyrations of some guy in a red boat who chased fish all over the lake. I laughed with him. I don't think he'll find me out because I recently sold the red boat.

Not all lake fishing is for moving schools. Some of it is done just as the river fishing is done. Creek mouths and bottom conformation cause stabilized feeding spots in some lakes and you simply anchor and wait.

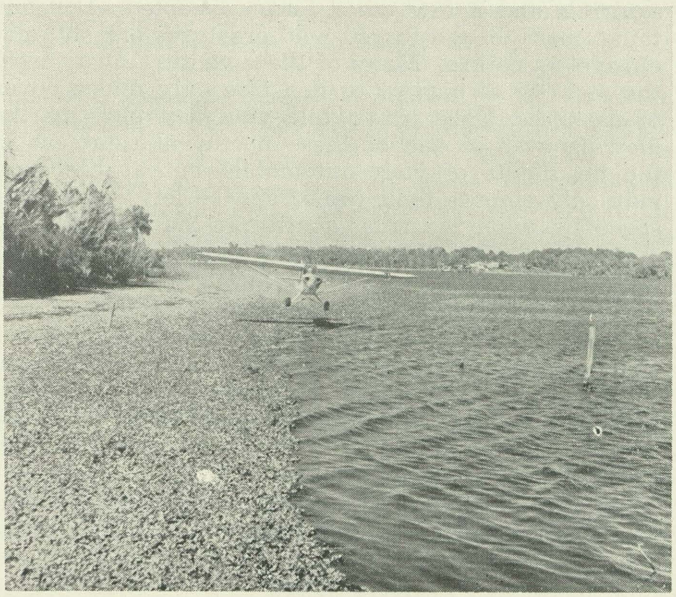
Not everybody likes school bass fishing and I'm glad of it.

END

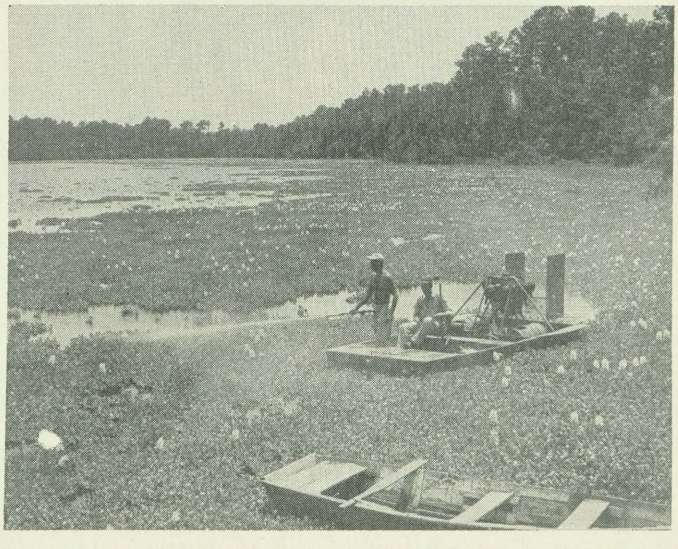
around the state



Marvin Mobley, Bushnell, examines a large bobcat killed by a passing car on the highway near the Lake County line between Center Hill and Okahumpka. Photo by Arthur F. Wilhelm.



One of the most hazardous of the many tasks which the Game & Fresh Water Fish Commission's air arm is called upon to perform is the extremely low-level flying required for some types of water hyacinth eradication spraying. Here a Commission plane lays down a misty trail of hyacinth killing spray. It takes an expert pilot to handle an assignment like this. Photo by Jim Reed.



Formerly one of the most productive angling spots in that portion of the state, Lowe Lake southwest of Wellborn, Suwannee County gradually became blanketed out with a rank growth of the prolific water hyacinth. Here is shown the first step in revitalizing this once popular body of water—Jack Carter and John Miller (standing) apply hyacinth killing spray from one of the Commission's specially equipped air boats. Photo by Ralph Voss.

VISIT FLORIDA'S STATE PARKS

Gold Head Branch State Park has good camping facilities whether your preference is for cabins, trailer parking space, or merely room to pitch a tent. Fishing is excellent in the immediate vicinity. Scenic features include a picturesque old mill, shaded lakes, and beautiful ravines in this hilly state park. There is a fine picnic area and a refreshment stand. The park is located 6 miles north of Keystone Heights on Florida State Highway 21.

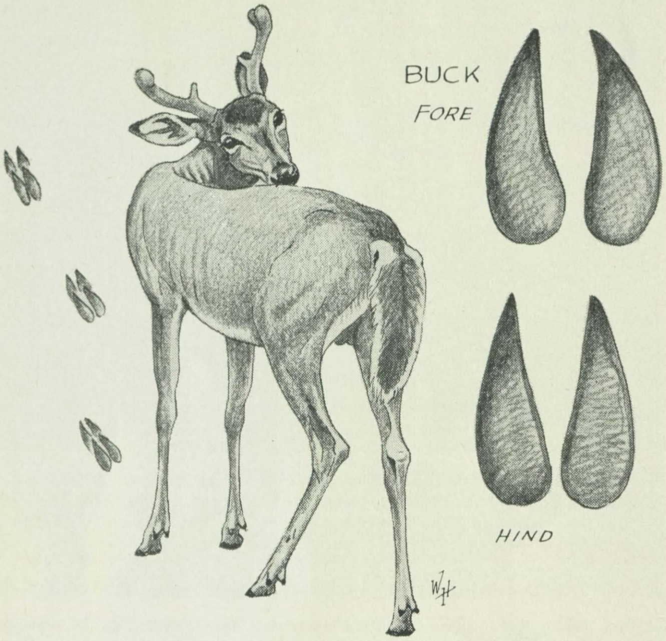
IN DUSTY ROADWAYS, along the muddy banks of lakes and streams, on sand bars, in the fresh earth about burrows, in trails, under bridges and culverts—in fact in every place where the earth is not too firm to take an impression—animals leave tracks. Of all the "signs" that mark the passing of wild creatures, none are more conspicuous nor more certain of positive identification than these impressions in the soil.

The bird watcher has merely to venture into the field at the proper hour and with the aid of a good pair of binoculars he will observe at least a goodly portion of the feathered wildlife at that time present in the vicinity. On the other hand, it is unusual to observe more than an occasional mammal by the same method, squirrels and a few other forms excepted. For one thing, many of the furred wild creatures are shy and elusive by nature. Many of them venture away from the security of burrow or den tree only under cover of darkness. Once in a while you may pick up the glowing eyes of one of these nocturnal ramblers in the headlights of your automobile but at best you may only glimpse their owner and be left to guess or speculate upon the true identity of the animal.

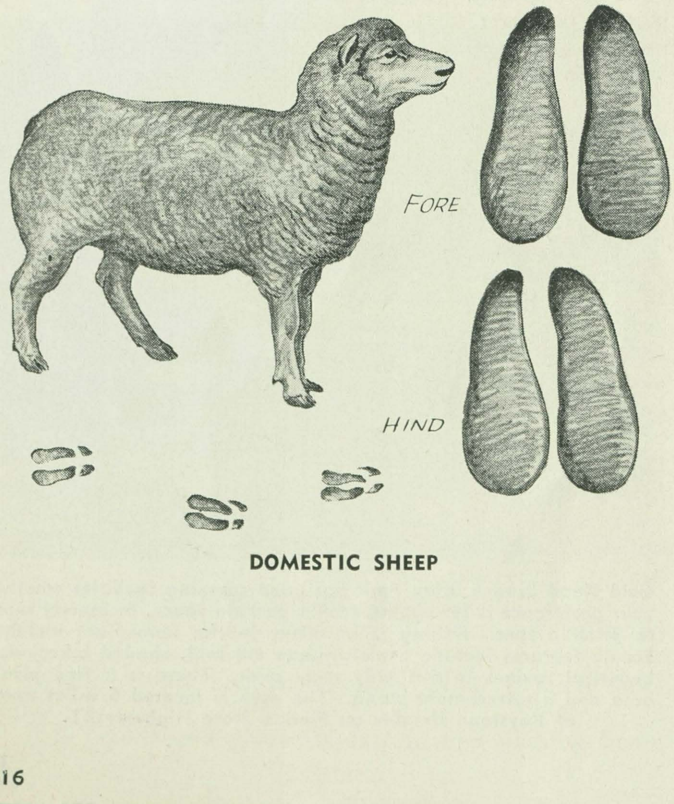
Hunters and trappers have a practical reason for being able to identify with certainty the tracks they happen upon during the course of their respective pursuits. To what avail a long vigilance on what appeared to be a well-used deer trail should the pathway prove to be merely a convenient route used only by domestic sheep or hogs. What trapper could properly locate his sets if he was unable to identify on sight the track record left by passing furbearers.

As with other outdoor pursuits, there is a good deal of satisfaction to be derived from being able to prop-

WHITETAIL DEER

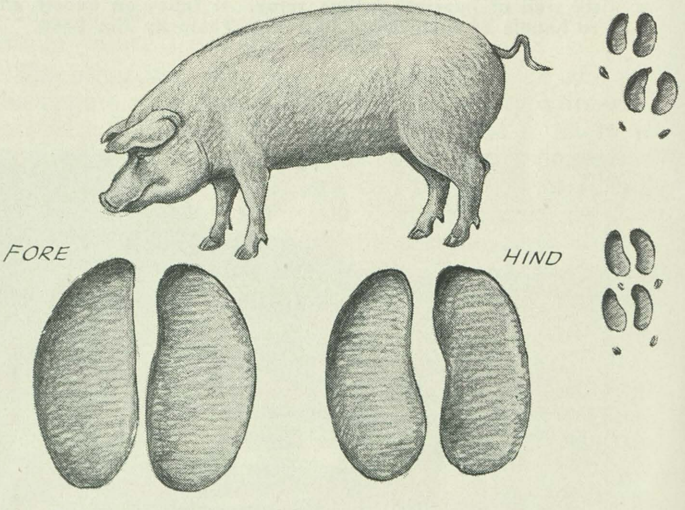


The exact shape of deer tracks varies somewhat with the pace of the animal and with the nature of the ground upon which the track is made. In general, the deer leaves a neat, clean-edged, more or less heart shaped track as shown in the illustration above. The tracks of the domestic sheep (below) shows both segments of the hoof about parallel with each other. The outside margin of the print normally shows a distinctive recurve.



DOMESTIC SHEEP

DOMESTIC HOG



The track of the domestic hog (above) consists of two more or less kidney-shaped segments, much heavier and more rounded than either the sheep or deer.

Animal Tracks

ARTWORK BY
WALLACE HUGHES

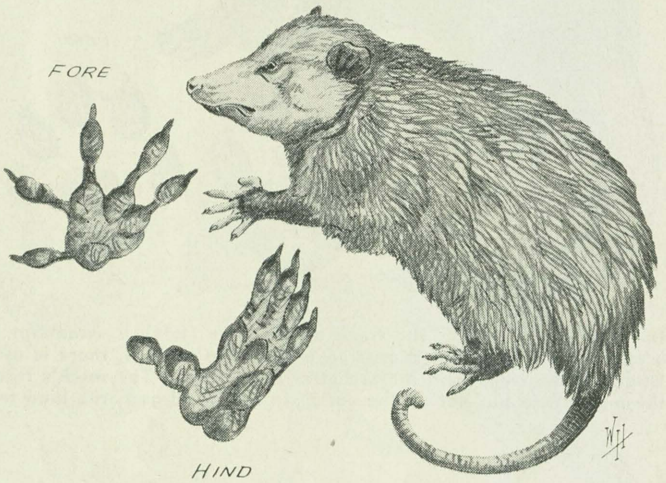
erly identify the tracks of various animals. The student of nature will learn much of animal habits if he is able to identify and to follow the tracks of wild creatures.

Each animal leaves a characteristic track. True, some tracks resemble others in a vague, general sort of way but each has some distinctive feature which makes it as unmistakable as if the maker of the track had itself been observed.

Presented on these pages are some of the animal tracks which you may find on your next trip afield. Study them carefully. They will help you answer the question "Who passed here?"

(Continued on Next Page)

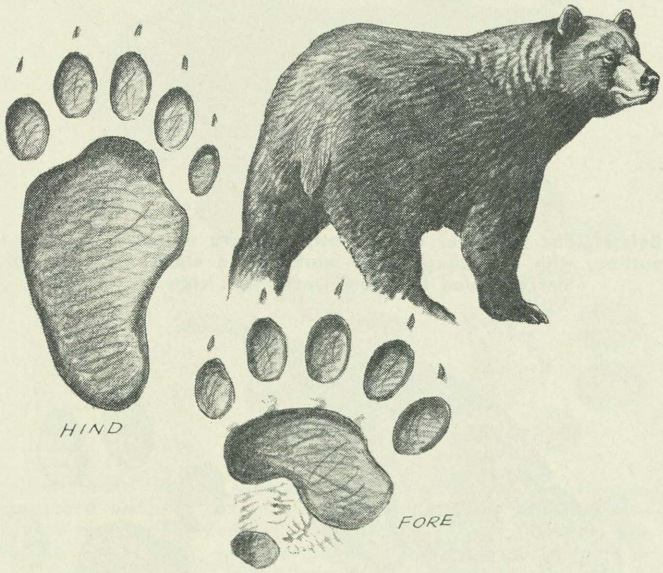
OPOSSUM



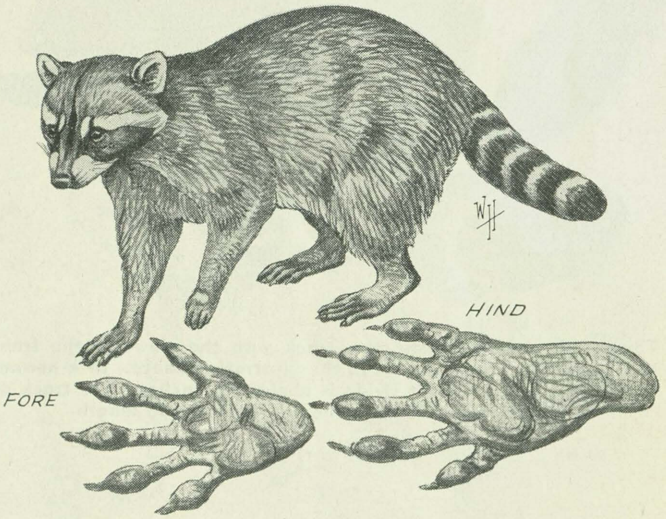
Above: The opossum's hind foot track shows all five toes, with the widely separated "thumb" mark a distinctive characteristic. Track pattern of a walking opossum will show a front foot and rear foot print side by side or with a back foot track a bit behind that of the front. Normal step ranges from six to eleven inches.

Below: The tracks of the raccoon resemble nothing so much as miniature hand and foot prints of a human. The illustration shows the typical appearance of the 'coons tracks.

BLACK BEAR

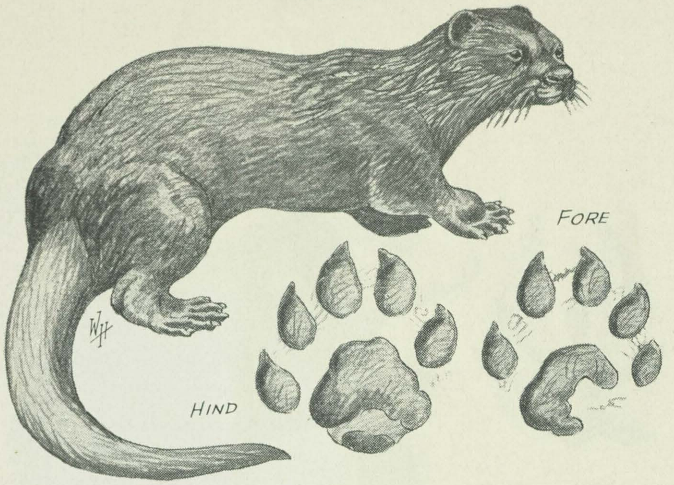


By size alone, the track of the black bear (above) is distinctive among Florida mammals. The hind track of an adult black bear will measure about 7 inches in length by 3 ½ inches in width. The print of the front foot of the same animal will measure something like 4 ½ inches in length and 3 ¾ inches wide. All five toes show distinctly as do the marks left by the claws.

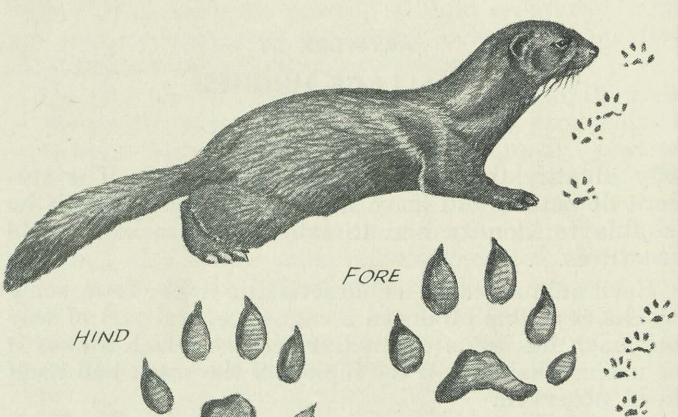


RACCOON

OTTER

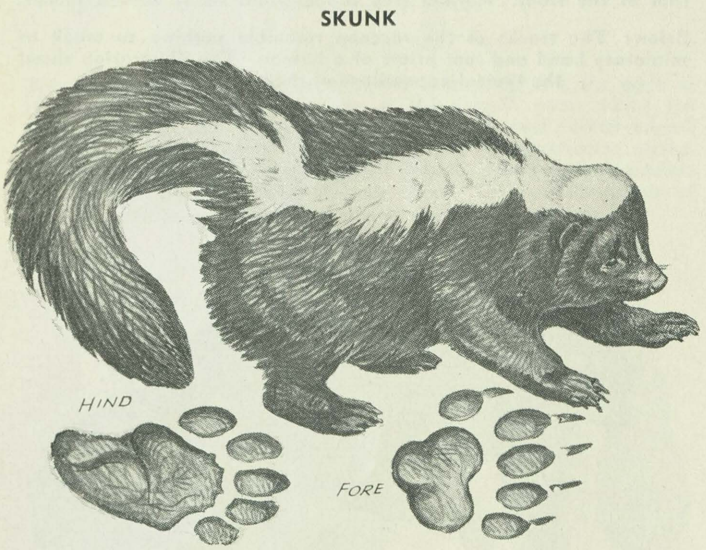


MINK



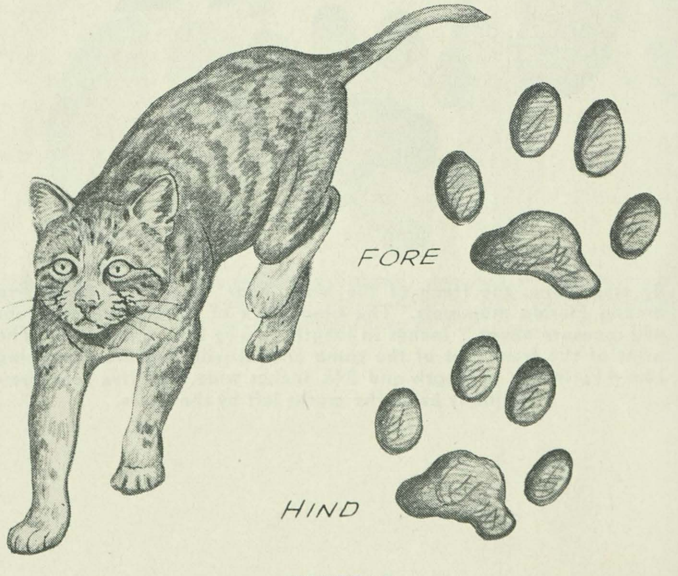
In general appearance, the track of the otter (left) is somewhat similar to that of the mink (right) but it is a heavier, larger print with a relatively larger pad. Except on a very firm surface, there is usually at least a fair indication of the hind foot web. In sand, the average length of the track of a mature otter is 6 inches. The mink's track is somewhat similar to that of the house cat but claw marks show on the mink track but not on the cat's. In the usual gait, the hind tracks are imposed over the front. Pace is normally from 12 to 23 inches.

SKUNK



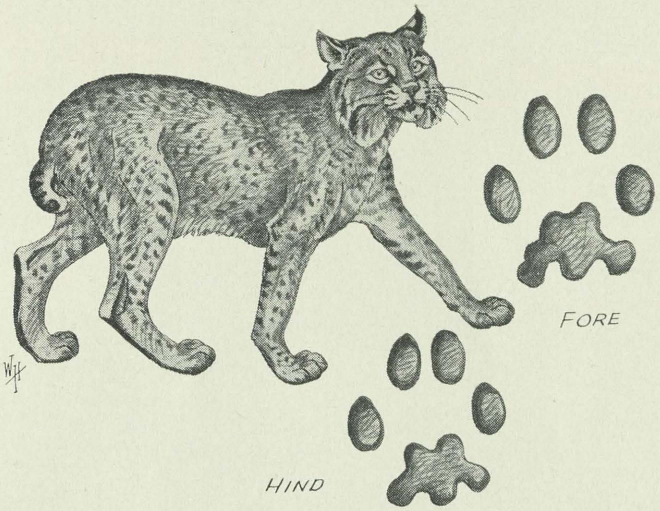
The skunk makes a distinctive track with the claws of the front feet showing prominently, as in the illustration above. In a normal walking gait, the skunk's stride is about 5½ inches. The track of the hind foot averages about 1½ inches in length.

Below: The tracks of the domestic cat are roundish in general outline, with oval-shaped toe marks. The claws ordinarily are not extended therefore tracks lack claw marks.



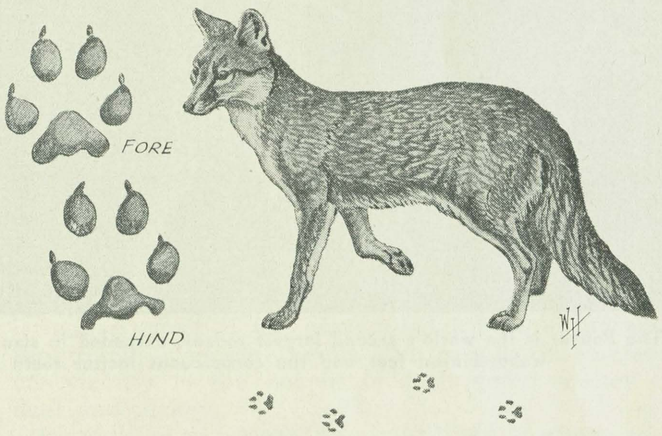
HOUSECAT

BOBCAT



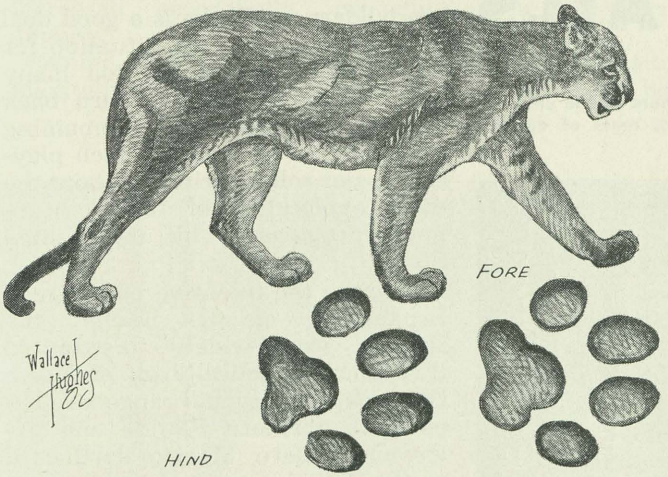
The tracks of the bobcat (above) are round in general outline without claw marks. The impression of the pad is distinctive, showing two lobes on the rear margin and an indentation on the front. An average front foot track measures about 1 ¾ inches.

GREY FOX



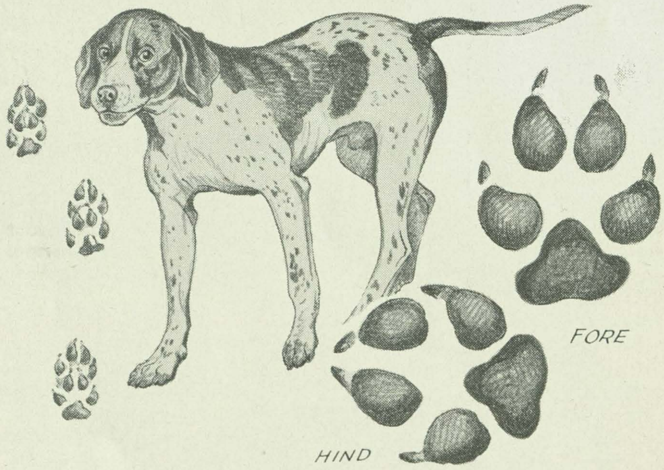
The grey fox (above) leaves a somewhat dog-like track although it is more delicate in appearance than that of most breeds of dogs. The pad is relatively smaller and narrower with two distinctive narrow lobes showing in hind foot tracks.

PANTHER



Panther tracks (above) are roundish in outline with a distinctive three-lobed pad. The claws are usually retracted and therefore leave no marks. The panther's front feet are larger than the rear ones, as in most cats. An adult animal's track will measure something like 3 inches long by 3 ½ inches wide.

There is a considerable variation in the size and to a lesser extent in conformation of the tracks of the dog. The illustration to the right shows a typical track.



DOG

The Beaver is the world's second largest rodent, exceeded in size only by the capybara of South America. The wide flat tail, the large, webbed hind feet and the conspicuous incisor teeth are prominent physical characteristics of the beaver. -bh-

SUNSHINE FLAT-TAILS

The beaver lodge at the Eglin Field site is typical of such structures elsewhere in the country. In general it resembles a haycock compressed of sticks, dead branches, roots of aquatic plants, peeled sticks, and small poles. -mn-

THE BEAVER has long been accepted as the symbol of the northern wilderness. There is a good deal of justification for this situation for there was a period not too many years ago when the northern back country was the main remaining stronghold of an animal which played a major role in bringing about the early exploration of the territory now encompassed by the United States.

Prior to the intensive commercial exploitation of the beaver, the species was widely distributed throughout practically all of North America. The original range stretched from northern Florida and extreme northern Mexico northward to the limits of tree growth.

Although the population was greatly reduced from that of former times, the beaver was not especially uncommon in northwestern Florida as recently as fifty years ago. They were eventually eliminated from this portion of their range and for a number of years the animal was unknown or at best, of very rare occurrence.

During the early summer of 1950, the Eglin Conservation Board made arrangements with the Georgia Game and Fish Commission to secure fifteen beaver for restocking purposes. These animals were released in groups of five each at three separate sites on Elgin Air Force Base lands. Of the three releases, only the one made on a tributary to Davis Creek, a stream which enters the northeast side of Choctawatchee Bay, has settled down and established themselves in traditional beaver style.

By the early fall following their release, the Davis Creek animals had constructed a main dam which, incidentally flooded out a road which had to be re-routed. The colony has continued to thrive until now there are at least 10 dams of various sizes impounding the waters which drain from the gently sloping pine forested hills common to that portion of the Eglin Field reservation. In addition to several bank dens, the beaver have constructed a good sized lodge at the upper end of the main pond.

Matt Whisenhunt, Game & Fresh Water Fish Commission biologist inspects the main dam of the beaver colony located on a tributary of Davis Creek, Eglin Air Force Base. -mn-

Besides providing themselves with a suitable place in which to live, the activities of the traditionally busy animals have wrought some drastic changes in the immediate vicinity. A variety of aquatic and wet land plants have become established and flourish in the quiet ponds and backwaters created by the fur-coated engineers. Waterfowl have found the ponds to be excellent feeding grounds and make use of the place in increasing numbers each fall and winter. Both mink and otter have discovered a haven amidst the formerly dry, high pine lands. Both bass and bream, introduced into the recently created ponds have found a highly desirable type of habitat and have increased accordingly, providing some excellent angling.

Water seeping slowly through the series of dams maintains a steady, more even flow in the creek below the colony site, assuring a reliable source of drinking water for a multitude of wildlife forms. The subirrigation effect of the impounded waters encourages the growth of plants, shrubs, and trees in the immediate vicinity to the benefit of such game species as deer and turkey.

In addition to benefitting a multitude of other creatures, the beaver and its workings are themselves interesting in their complexity.

The beaver is our largest rodent and is exceeded in size among the multitude of the world's *Rodentia* only by the capybara of South America. An average mature beaver weighs something like forty pounds although

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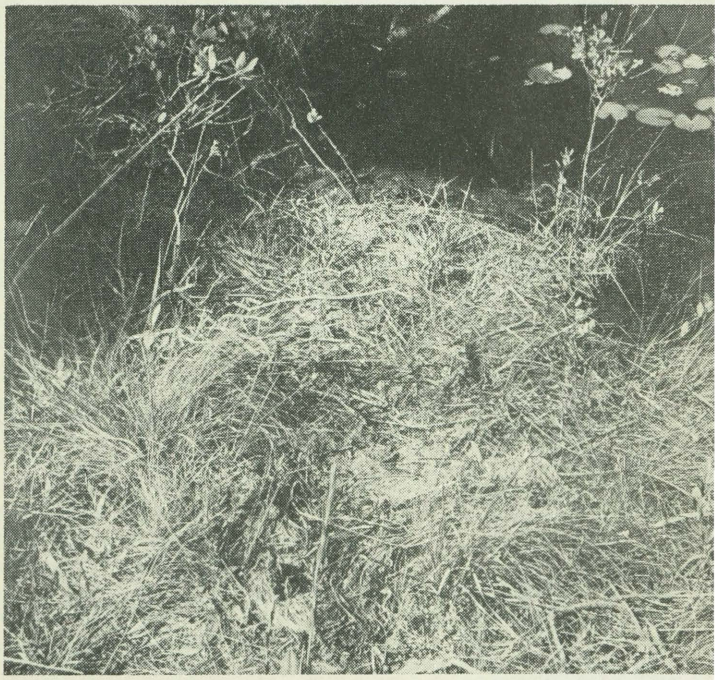
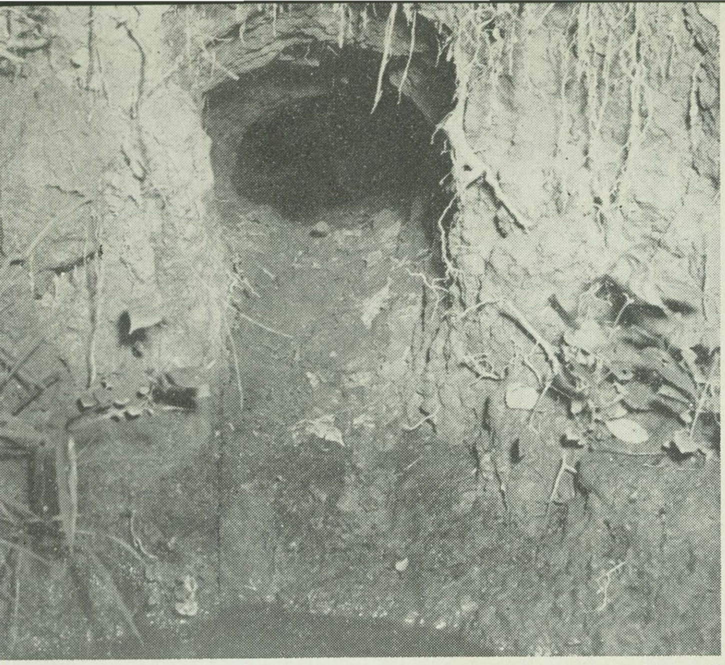
The ponds are linked together by well used trails and canals. One such beaver "highway" is shown in the photo above. -mn-


Beaver are playful animals and they like to roll and frolic on the bank. The mashed down grass and other pond-side vegetation indicates this was the scene of such a beaver "party." -mn-



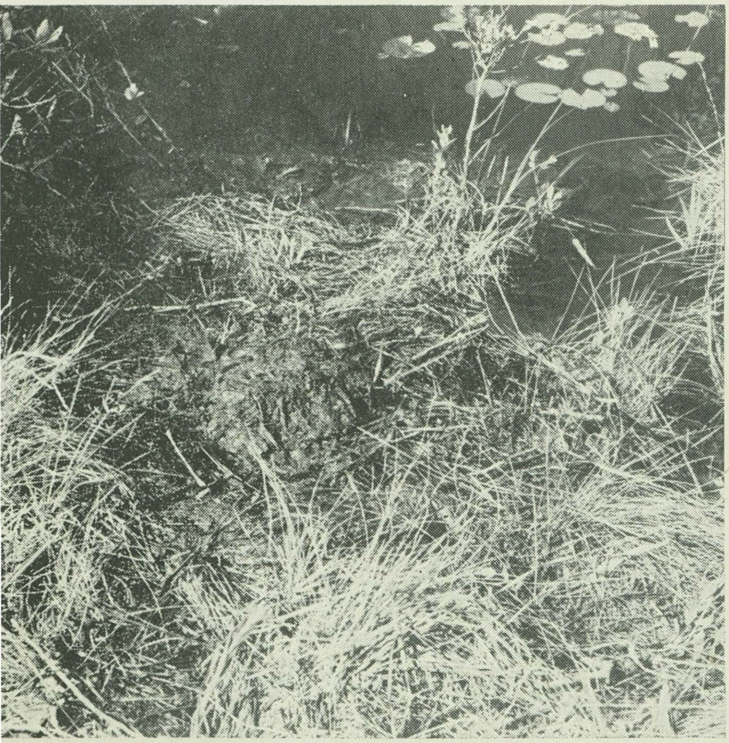
Under some conditions beaver use regular burrows dug into the bank rather than constructing the mud and stick lodges. Such animals are usually referred to as bank beaver.

The peeled twigs mark a beaver's dining table or feed bed. In addition to a variety of bark, the animals consume many aquatic plants. -mn-

(Continued from Preceding Page)

occasional specimens may attain eighty pounds or even more in weight. Beaver continue to grow throughout their life, although after the third or forth year, and perhaps before, the rate of growth slows down considerably. Indications are that a ten year old beaver has reached relatively old age. One animal is known to have lived for 19 years as a captive. In the wild, predation, disease or other factors would undoubtedly have cut down this particular animal long before it had attained such advanced age.

The wide, flattened, all but hairless tail, the large, webbed hind feet and the conspicuous incisor teeth are the three most prominant characteristics of the beaver.



Secretions of the castors and oil sacs are deposited on scent piles —heaps of mud, water-soaked vegetation, and twigs scratched into a pile on the bank. -mn-

The tail serves several important functions. When the animal is swimming, it acts as an efficient rudder. When the beaver is cutting down a tree, the tail is used as a prop to give additional leverage and support to the working animal. When running the animal gallops with a clumsy gait, thudding the ground with considerable force with its tail. This helps to propel the beaver forward. As a signalling device, the tail is important. Upon the appearance of an intruder, a beaver spotting the potential danger slaps the water a resounding blow with its tail. This violent splashing or popping of the water communicates the signal of alarm to a considerable distance.

The large muscular basal portion of the tail is covered with dense, soft underfur overlain with the coarser guard hair as is the body but most of the appendage is flattened and scaly in appearance. The outside of the tail is covered with a tough, blackish-brown skin superficially appearing to be scaled like a fish, but actually it is merely folded in an intricate, overlapping pattern.

Somewhat clumsy on land though the beaver may be, it is an extremely adapt swimmer. Under normal circumstances, about nine-tenths of the body of a swimming beaver is beneath the water. The large webbed hind feet provide the propulsion with the tail aiding as a rudder. The front feet are not webbed and when the animal is swimming they are relaxed so that they stream back against the breast.

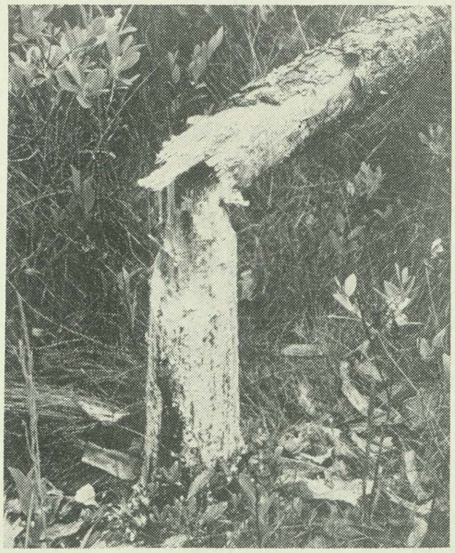
Although the stick and mud dams and the large conical houses or lodges are considered typical of beaver colonies, it is not uncommon for the animals to dwell in burrows dug into the bank. Such dens are used especially in places where the waters are deep and the banks of sufficient height above the water level to make their use practical. In such localities, dams are not ordinarily constructed. Here the most apparent sign of beaver activity consists of sticks peeled of bark and stumps or felled trees on the banks. Most burrow entrances are under water and are not readily detected except when low water reveals them.

After the main dam has been constructed, beaver commonly make smaller dams above and below the main one, thus after a period of years, a single colony's home site may consist of a whole series of ponds and dams with connecting trails and channels. Such a set up provides what might be considered a through highway making a larger foraging area much safer and more readily accessible.

The dams require steady maintenance work as the wood and leaves which form a large part of the materials from which they are constructed rot away. Bushes and trees often sprout on dams, their roots working down through the structure which in time may become a solid embankment highly resistent to the ravages of the elements. In the western part of the country dams still in use and kept in regular repair by beavers, are known to have been in existence for at least 100 years.

The beaver lodge at the Eglin Field site is typical of such structures. In general, it resembles a haycock constructed of sticks, dead branches, roots of aquatic plants, peeled sticks, and small poles. There is comparatively little mud plastering on this house which seems chararteristic of beaver lodge construction in warmer climates. In the areas of more severe winter climatic conditions, lodges are usually heavily plastered with mud which, when frozen, makes the house all but impregnable to the lynx, bear, mountain lion and other large predators. Lodges commonly have two or more underwater entrances opening into a central nest chamber above the water level.

Beaver of both sexes possess two pairs of well-developed scent glands. They are situated on the lower part of the body near the vent. The larger of the glands, the castors, are somewhat flattened and oval in outline. They are yellowish brown in color. The inner walls of these glands are much folded with numerous pockets containing a grandular, sticky material which resembles partially ground, brownish tree bark. This appearance gives rise to the common name "bark sacks". The castors secrete a yellowish, thin liquid of pleasant odor. This secretion is called castoreum. In former times, the castors were dried and found a ready market to perfumers who used the material as a base for perfume manufacture. Discovery of synthetic bases has eliminated the use of beaver castor for this purpose. At the present time, the main use is as an important ingredient for various animal scents used by fur and predatory animal trappers.


A small pine cut by beaver. Although they usually work on deciduous trees, beaver sometimes gnaw on pines and other conifers. -mn-

Wood chips left by a "logging" beaver. The highly specialized incisor teeth of the beaver are effective wood cutting tools. -mn-

The "oil sacs" are smaller than the castors and are located behind them. These structures are thick walled and fleshy in appearance. They attain their maximum size during the breeding season. The oil glands secrete a heavy pungent yellow to tan colored oil. Secretions of the castors and oil sacs are deposited on scent piles—heaps of mud, water-soaked vegetation, and twigs scratched into a pile on the bank. Beaver of both sexes visit the scent heaps. Although the piles may be found the year around, it is during the mating season that they reach their maximum size and use. Scent mounds in regular use give off a characteristic, not unpleasant odor that may be detected at some distance, even by the relatively dull human sense of smell.

Beaver stump. A deciduous tree felled by one of the traditionally hard-working animals. -mn-

Beaver generally reach sexual maturity during their third year although some individuals mate during their second year. The number of young in the annual litter varies, with indications that those animals having available an abundant year around food supply produce larger litters than those not so fortunately situated. The average number of young in a litter is approximately 4 although there may be only 1 kit or as many as 6 or 8.

A colony generally consists of the adult male, adult female, the yearlings of the previous year's litter, and the young or kits of the current year. With the arrival of each season's new young, the two-year olds that have been living with their family are driven out. They wander about until they locate a suitable site and there seek to establish a colony of their own.

Although the bark of various trees is the mainstay of the beaver diet, the animals eat a great variety of aquatic plants including the roots of waterlily, duckweed, eelgrass, and wapato. Various grasses, herbs, roots, and the roots, new shoots, buds, and leaves of many types of land plants are eagerly ought by the beaver. Over most of their range, the bark of aspen, cottonwood, and willow are dietary staples although maple, beech, cherry, birch, alder, and other trees are much utilized. Pines and other conifers are some-

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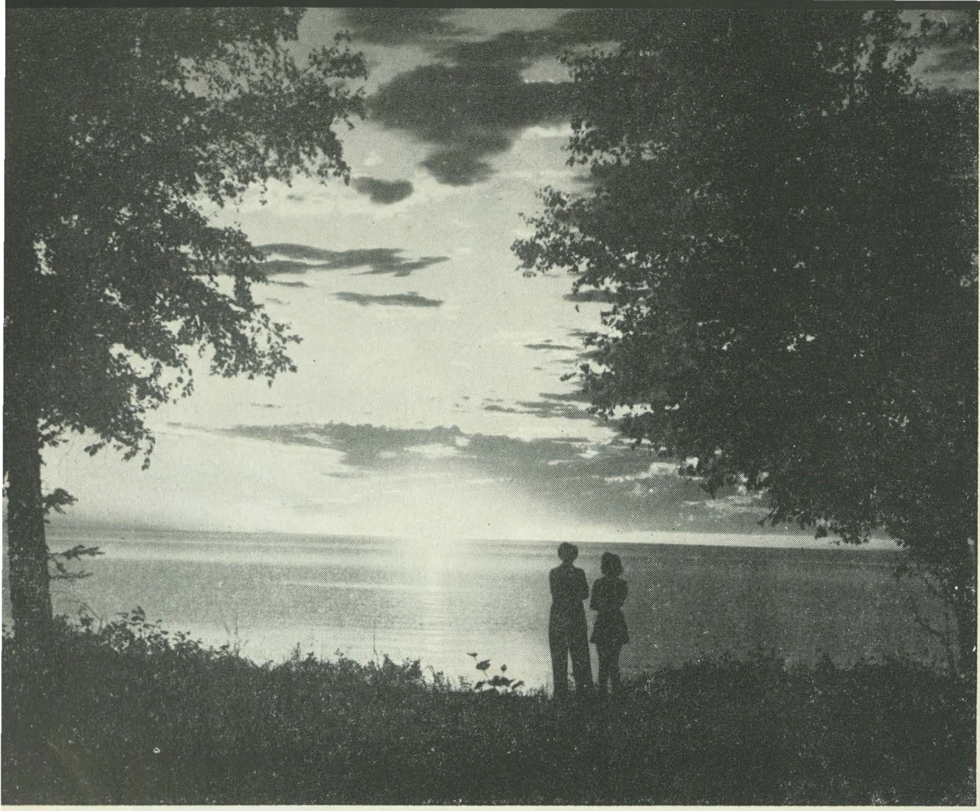


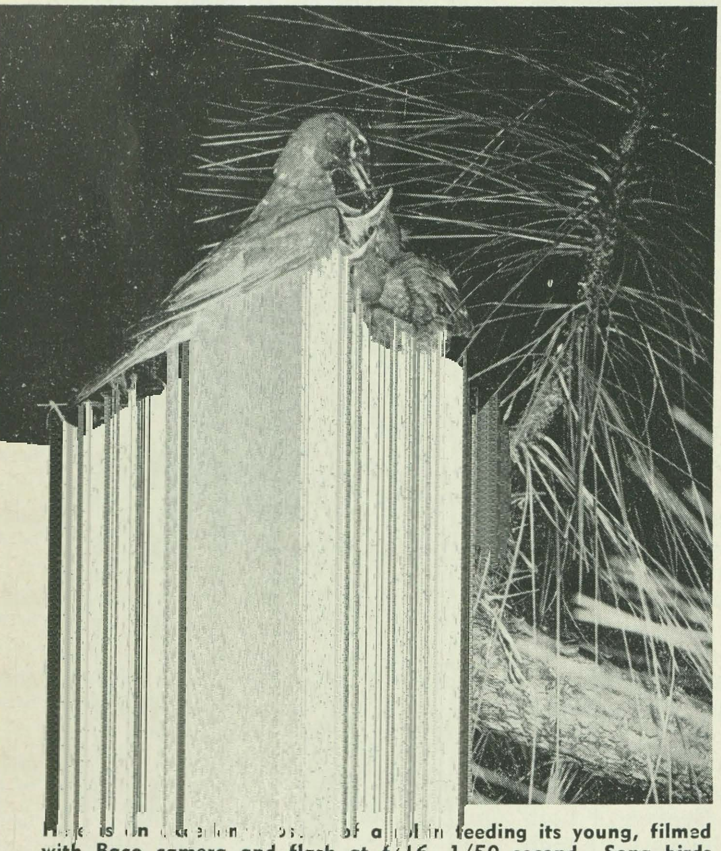
Ormal I. Sprungman has been interested in photography and the great outdoors ever since, as a youngster, he was presented with his first box camera. He worked his way through the University of Minnesota by freelance writing and photography, graduated as a journalism major, and continued freelancing.

In 1934 he began his Camera Afield department in SPORTS AFIELD which attracted many readers, and today his following is immense.

Don't stand on shore edge when shooting lake scenics. Instead, step back a little and frame the scene through trees. Note that skyline does not cut picture exactly in two.

Film Fun In Florida

By ORMAL I. SPRUNGMAN



Here is an excellent exposure of a robin feeding its young, filmed with Baco camera and flash at f/16, 1/50 second. Song birds make just as fascinating quarry for the sportsman's camera as game birds. Photo by Don Bleitz.

FLORIDA WILDLIFERS who tote movie camera or still will get a lot more out of their hunting and fishing than the lads who seek only fresh meat or a hefty string.

Photography can be a stopgap when the fish aren't biting or game is scarce, providing additional pleasure on any outing. But it can be more than that.

The camera has proved itself a powerful tool in preaching the gospel of conservation. As a defensive weapon to back up fishing and hunting tales, the camera is an invaluable accessory to rod, reel and gun.

Choosing a camera is a lot like picking a wife or a new car. It's chiefly a matter of personal taste. Some fellows are perfectly happy with a fixed focus job and a minimum of knobs to turn or buttons to push. Others like lots of built-in this-and thats, and when they set out to film, they load up like a Christmas tree.

First maxim of any sportsman filmer should be to travel light.

For this reason, the 35mm camera has proved to be a happy choice. It has all the qualities of minimum weight and compactness, and shoots many exposures with a single loading. Cost per shot is low. The film itself takes up little space.

Such cameras sell for from fifty to several hundred dollars, depending on the lens, shutter speeds, added refinements and reputation of the manufacturer. Most of them will take slip-on or screw-on filters, and the better ones are adapted to fit accessory wide angle and telephoto lenses as well as special lenses for extreme closeup work.

Fitted to an everready case, the camera can be carried suspended from the neck, allowing hands to be free for rod-wielding and gun-handling. The outfit can be swung into action on a moment's notice.

Equally popular is the 2¼x2¼ reflex, either single lens or twin lens. Such groundglass focusing cameras add further fun to photography since they enable one to compose the scene before clicking the shutter.

Since focusing is done visually up to the moment of taking the picture, it is almost impossible to wind up with an out-of-focus shot. With the single-lens reflex, the viewing lens is also the taking lens, but with the twin-lens outfit, sighting is done through the upper lens which always remains at its widest aperture to admit more light for critical focusing.

The 2¼x3¼, 3¼x4¼ and 4x5 cameras are for the more rugged lads, who don't mind taking on a little extra poundage to produce a larger negative size. The 3¼x4¼ outfit is a happy medium for both bulk, price and cost of operation. Many editors, including the calendar people, still prefer the larger transparencies, although there is some leaning once more towards the 2¼ squares and 35mm.

If there is any doubt in your mind which type of camera to pick, consult with local professionals. Most of them have their own ideas of what they like and dislike, but their suggestions may prove helpful. If possible, ask your local camera store owner to let you try out two or three cameras under varied conditions. Check for ease of operation, compare price and picture results, then pick the one that fits your pocketbook and gives you what you want.

Once you have made your camera selection, what next?

There are certain accessories which are essential, like a medium yellow filter to enhance clouds and give artistic snap to your pictures. A green filter is good for brightening foliage in wooded country, while the red disk gives even more dramatic results, blackening skies and rendering red objects white.

A sunshade is also a useful accessory, preventing the lens from picking up extraneous light and resulting in sharper pictures. Some sunshades are of the screw-in or slip-on type, others fold up when not in use.

If your camera permits, a screw-in type cable release is more desirable, since there is less chance of camera movement when manipulating the shutter.

The brand and type of film you use depends upon the individual likes and the particular assignment. A fully panchromatic film is needed since this produces colors in their correct tones of gray. With "color-blind" films, reds photograph black, blue skies white. For this reason, panchromatic emulsions are desirable for best rendition.

Slower films are usually finer grain, but there are times when, filming under difficult conditions, film speed is more advantageous than grain. Some photographers use supersensitive stock almost exclusively for both outdoor and indoor work with flash.

While prize-winning pictures have been taken with lowly box cameras, the beer-bottle lens and slow shutter speed eliminates it from consideration by serious workers. The sportsman's camera should have at least an f/4.5 lens, and f/3.5 or faster is even better. Shutter speeds of 1/50 or 1/100 will be ample for scenics or wildlife shots where game is standing still or birds sitting and there is little movement. But if you want to halt fleeing deer or antelope or "freeze" ducks or geese in flight, better plan on 1/300 or 1/500 second. To film Florida's leaping bass successfully, 1/500 or 1/1000 second may be needed, although bigger fellows, like marlin, sailfish or tarpon which seem to stay out of water longer, may be halted with a somewhat slower shutter speed.

Florida bass are natural camera subjects, but filming their leap is usually a two-man job, with one fellow handling the oars and camera while the other brings

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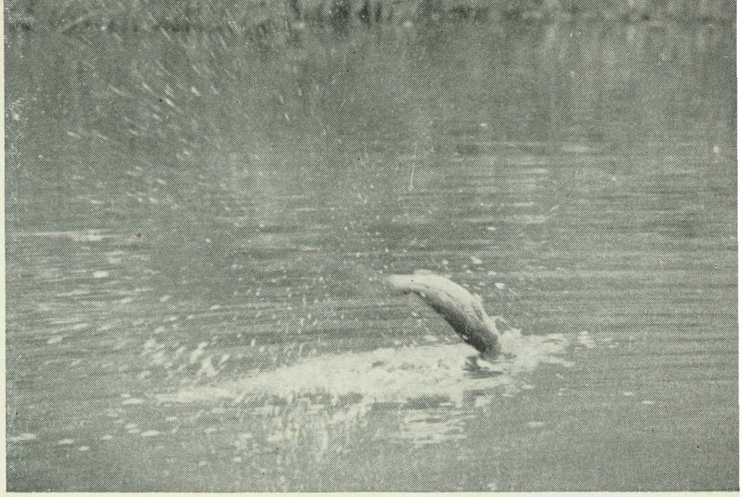
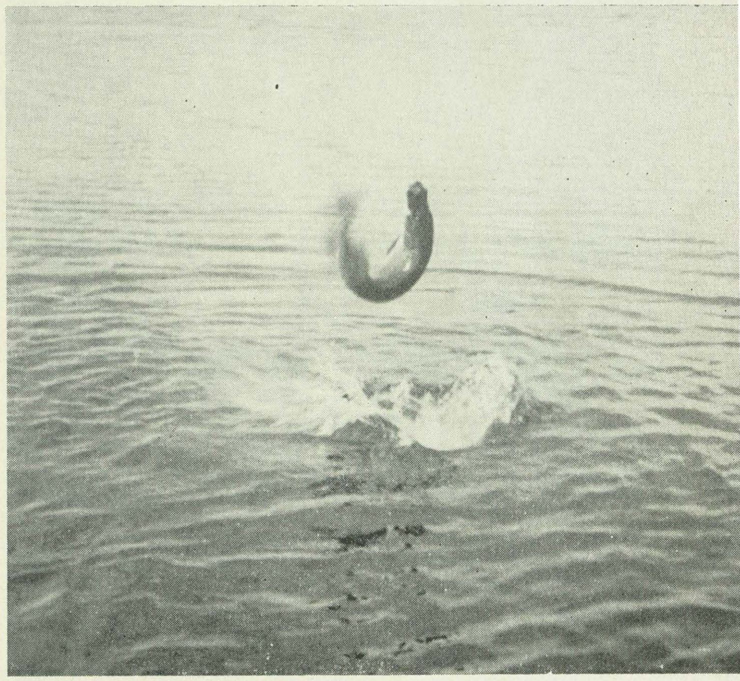
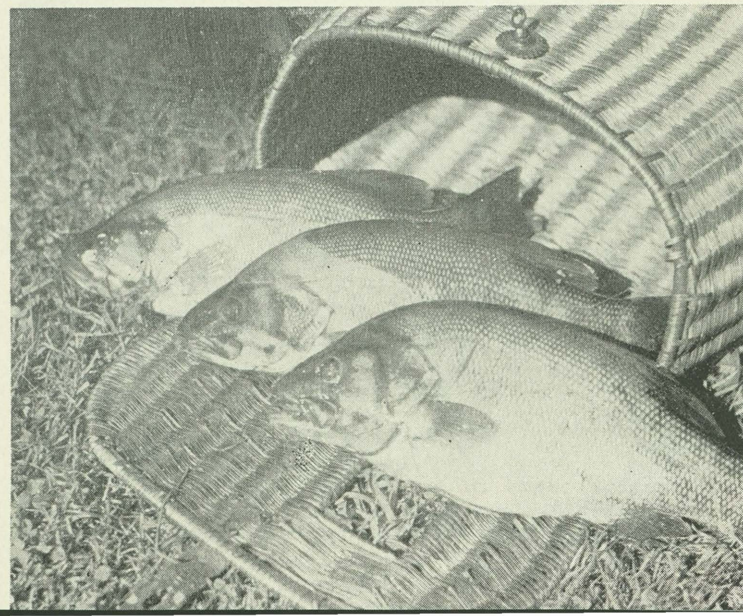


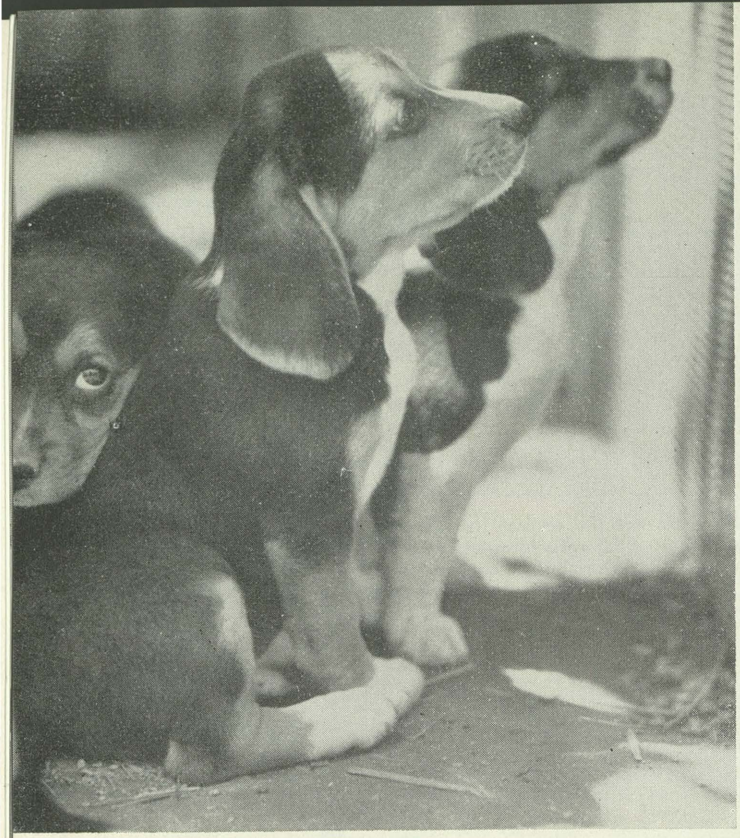
Bass are not the easiest fish-leaping subjects. While fast shutter speed stopped water droplets in air, fish was already heading into water when the shutter clicked. Because of slight time lag, shoot picture as fish starts upward to catch mid-air jump.



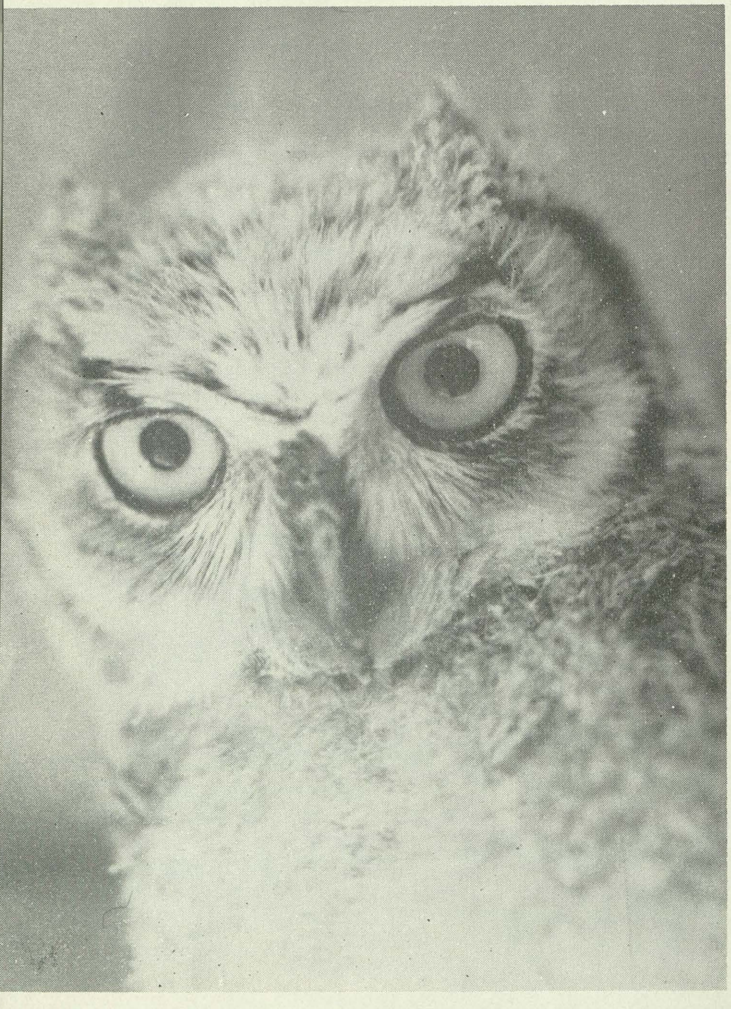
Here is an interesting leaping fish picture, with the young fellow showing a perfect U above water. This was taken with a small camera at 1/250 second.

Instead of gill-stringing your fish, arrange them in an attractive background and closeup only the biggest ones, as revealed in this creel shot.





The family pet makes an interesting camera subject, too. You can build a complete picture series or movie around a typical day in the life of a dog. Here is an appealing study.



Telephoto effects can be given to wildlife closeups made with ordinary lenses by cropping negative and greatly enlarging small portion, as shown here in this live owl portrait.

(Continued from Preceding Page)

the fish within closeup range.

When the strike is felt and the fish is hooked, pump him to the surface as quickly as possible so he will have plenty of fight and leap left in him. As soon as the back fin knifes the surface, chances are the bass will break skyward to throw the hook. Focus at the point where the line cuts the water, centering this spot in the viewfinder. Shoot at the fastest shutter speed, with the lens set at the smallest f/stop which film speed and lighting conditions permit for greater depth.

If the fish decides to rest momentarily beneath the surface, a sharp upward tug on the line will usually make him jump. Because human reaction time is slow, there may be a slight time lag between the moment when the fish leaps and the shutter clicks. For this reason, most fish filmers click when the fish starts its upward jump, thus catching it in midair.. If you wait too long, you may wind up with only the final splash.

Don't be disappointed if first results fail. Even the experts figure that one good shot in six to twelve tries is a pretty fair average.

When you set about to film the day's catch, don't string your fish through the gills and hold them up. Such pictures will point you out as just another meat-hunter, and nobody is really impressed by your prowess in taking a sackful.

Instead, pick out several nice specimens and arrange them in a rustic or natural background, stroking the fish with water to restore scale luster. Perhaps the rod and reel, the tackle box or a pair of old wading boots, worm-eaten stump or the bow of the boat on shore, might figure in the composition of the picture. Study the work of other successful fish filmers, then try to make your pictures twice as good.

To supplement your piscatorial picture coverage in the Sunshine State, try a story-telling photo series built around an actual jaunt. Take a flash shot of the family in the den looking over vacation literature or a road map. Show the packing of the car, with duffel sprawled on the ground, and dad scratching his head doubtfully. Take a scenic or two along the way, working the car into the composition. Have the camera ready on the car seat beside you, waiting to take any unexpected wildlife scene along the road.

When you arrive at camp, show the family piling out, unloading camp gear, setting up the tent, putting fishing rods together.

You will want a shot of the lake for your vacation album, but don't stand on shore with your toes in the water and shoot out over the broad expanse. Instead, step back fifty feet and frame a shot of the distant scene beneath palm branches or other foliage. Have some member of the family in the foreground, silhouetted against the water, perhaps tossing out a fly or plug. Or admiring the rising or setting sun.

Informal shots may be made at leisure about the camp, while dad and others cast from boat or shore. Preparation of an outdoor meal, especially the fish fry, offers interesting picture possibilities, and the lowering sun provides a fitting silhouette finale to a busy outdoor day.

Salt water angling offers problems to the photographer who prizes his filming gear. Ocean spray, even the salt air itself, tends to corrode metal parts and cause leather to mildew. Salt water droplets on the lens itself can cause endless trouble.

Keep the camera in its case, well-protected from water, sand or sun, when not in use. Be sure to wipe it thoroughly after every deep sea excursion. Some photographers slip an inexpensive light yellow filter over the normal lens to protect it from spray on deep sea filming jaunts. The glass filter can be quickly removed, polished and replaced.

Flash photography has gained great momentum since the early years of flashpowder and tray. This is the day of high-speed electronic flash and peanut-sized bottles of sunlight, dozens of which may be stowed away in the jacket pocket, ready for instant use.

Amateurs should get over the idea as quickly as possible that flash is intended only for after-dark picture-clicking. Synchroflash daytime photography is now widely used in bright sunlight to fill in dark shadows and add sparkle to closeup work. If you really want to be impressed with the possibilities daytime flash offers, try a shot of your fishing partner with light directly overhead or from side and back—without flash. Note how shadows cast by the nose and mouth spoil the portrait effect. Shooting the same closeup with flash brightens the darkest corners, adds modeling to the face and gives depth.

Flash is made to order for wildlife filming at night. In fact, one of my favorite shots was taken many years ago up on Isle Royale, now one of America's newest national parks. The sun had already set and darkness had come swiftly. We had been waiting patiently for moose to come down to drink from a stream of salty-tasting copper sulphate which drained an old abandoned mine. Soon we heard the telltale crackle of twigs underfoot, and we let go with flash. When the film was developed, we found we had not one but two moose in our picture, one with head raised above the stream and water dripping from his jaws.

One Eastern photographer actually rigged up a trigger trip for his camera by stretching a fine wire across a runway, pointing the camera and flash in the general direction of the trail. One end of the wire was fastened to a tree, the other to the trigger trip of the camera, which was housed safely in a heavy box. As the animal ambled down the path, pressure against the wire set off the flash and tripped the shutter. Although sensitively set, the wire was weak enough so that tension would cause it to break before damage would result to the camera.

When morning would come, the photographer would advance the film another notch, insert a new flashbulb, repair the taut wire and await another evening's fun. When the roll was completely exposed, he would soup his negatives and look excitedly for any unusual poses he might have captured.

While many of the best wildlife pictures are unplanned and taken quite by accident, the careful stalker of game soon finds that patience in a strategically-located blind often pays off. Such blinds may be made of burlap, old canvas, cattail reeds, palm leaves and even brush, but in every case the material should blend well with the background to avoid detection.

Blinds should be large enough so that the photoographer can sit comfortably inside, with enough peepholes to permit shooting from all directions. Once a blind is set up, it should remain unused for several days to permit the bird or animals to become accustomed to the intruder. Entrance to the blind should be from the opposite side, so as not to frighten the quarry.

Once flushed, some birds will watch from a safe distance until the photographer is forced to depart before returning to the nest. If you ever run into a similar problem, try a little bird psychology. Enter the blind with another partner in an obvious way, get settled with camera in readiness, then ask your partner to depart. The bird, suddenly realizing that danger is now gone, will return to her nest promptly so that you can get the pictures you want.

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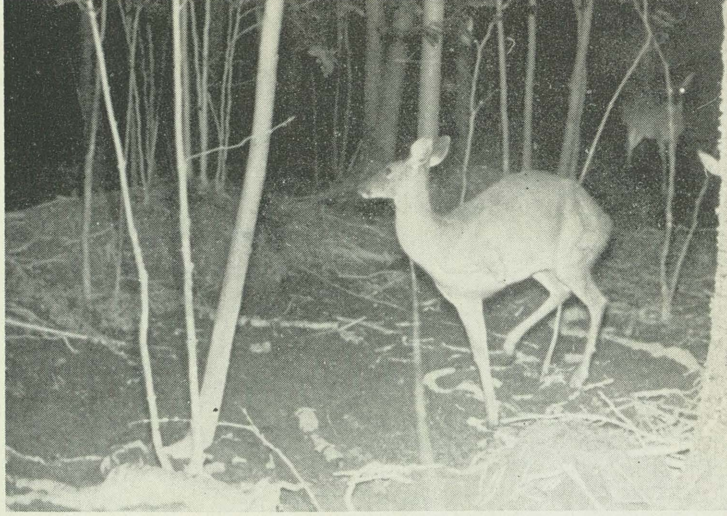
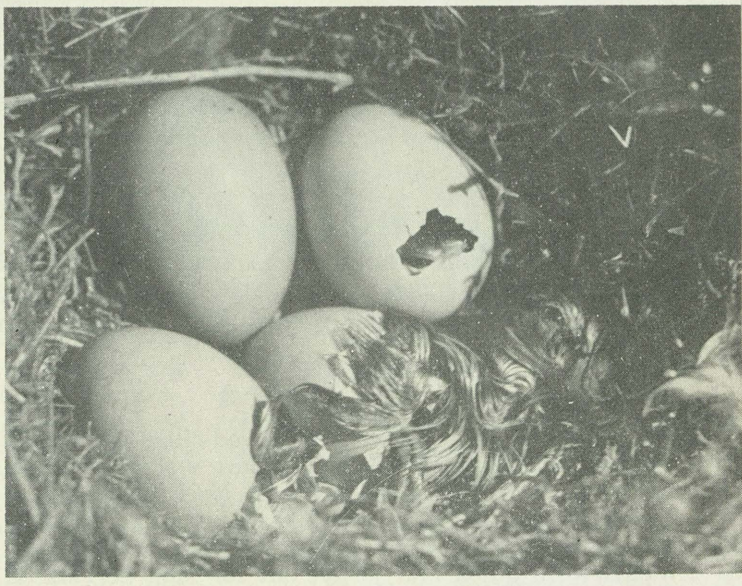
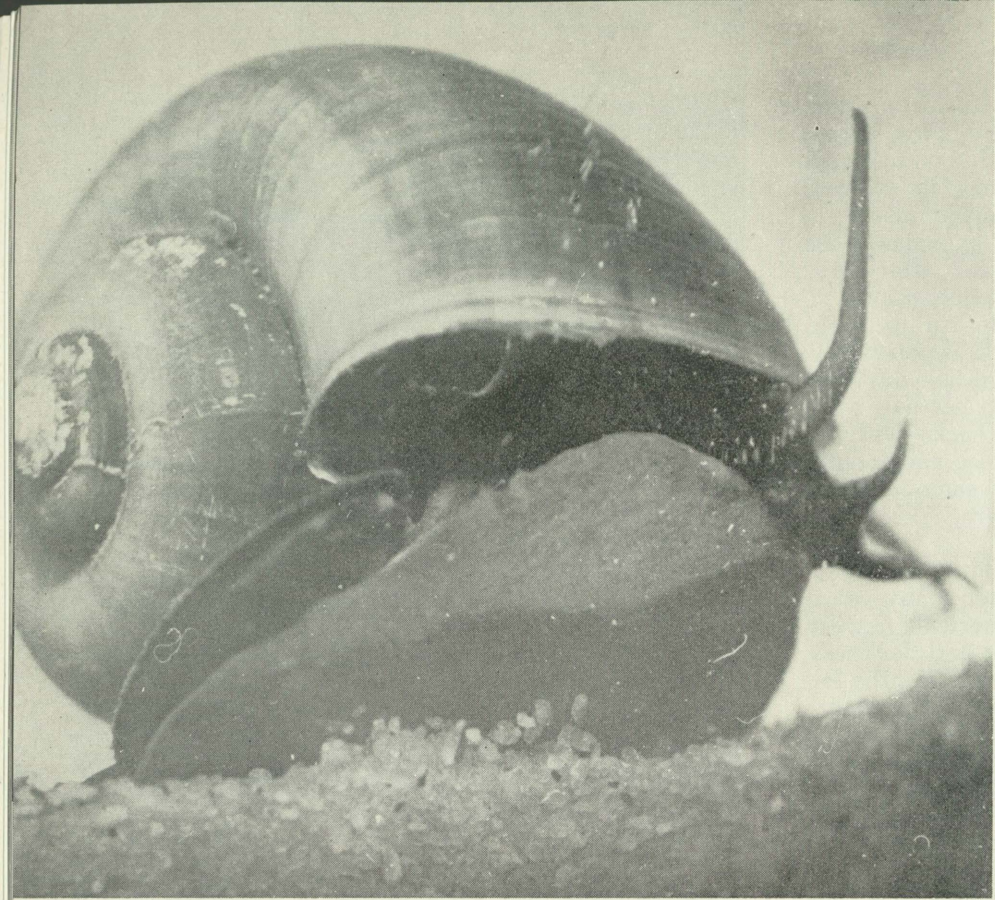


A thin wire stretched across a runway clicked camera trigger and flash when animal brushed against it along trail. Photographer McHenry was plenty surprised to see that a 3-legged deer was first victim in taking its own picture. Photo by Joe McHenry-OPL.



The alert photographer may come upon unusual shots like this closeup of the birth of a wild duck. Note freshly hatched bird, with second chirping and chipping its way out of shell. Young ducks are equipped with egg tooth to aid in escape.

Electronic flash eliminates need for bulbs on outings. Here a typical sportsman clicks a closeup of a trout taken by an angling pal.



America's largest freshwater snail, Pomacea paludosa is preyed upon by limpkins, the rare Everglades kite, and a multitude of other birds, mammals, and fishes.

POMA the SNAIL

THE LARGE, dark brown bird moved silently—almost without ripples. Clear shallow waters reached nearly to the knees of its long legs. Neck forward and head lowered, the bird searched, occasionally probing into the soft bottom with its long bill. The bird's movements were quick and jerky, but for long periods of time it stood still and surveyed the bank, the river, and the sky.

Satisfied that it was unobserved, the limpkin continued the search along the shallows of the east bank, where the late afternoon sun lighted the water. Suddenly with a quick thrust into the water, a large snail over two inches in diameter was caught and held aloft. Jerkily turning its head around, the bird made sure the coast was clear and then waded towards the bank. The brownish-green snail was pushed securely into the mud with its opening upward. Then the limpkin worried the two halves of its bill in on either side of the horny plate the snail had pulled tightly into its shell opening. With a quick twitch of head and bill the snail's armored door was gone.

Once again the limpkin looked around—quickly this time. The capture of its prize had not been noticed. Deftly the body of the snail was removed from the shell and swallowed. The bird moved on. Left embedded in the soft bank was the shell. In the mud around it were empty shells of other snails that had come to the same swift end.

Unaware that the universal drama had transpired less than two yards away, a slightly larger snail moved slowly underwater up the broad green ribbon of an eel grass leaf. Poma, the snail, gobbled quantities of algae as though trying to satisfy an appetite of long standing, as indeed it was. Almost a week of unseasonable warm weather had wakened Poma from a stuporfied burial in the river sand close under a rotting log. It was mid-March. The dogwoods were white clouds caught in nets of bare gray limbs back in the forests on either side of the river. Tender green shoots in many shades tentatively tested the spring air. A white sliver of moon rode high against the blue west. It was the time of awakening.

How Poma felt the warmth, or whatever had stirred its being from hibernation, is a pondery. The river waters gushed forth from deep in the earth only a few miles upstream from where Poma now grazed. Gushed forth millions of gallons of water each day, and day after day the water remained the same temperature. But without knowing why, and probably without knowing that it was doing anything at all, Poma dug down into the bottom when the weather grew cold each fall, and emerged with a rapacious hunger when it grew warm each spring.

A minute passed while Poma edged two inches further up the eel grass blade. Having reached the balance point of the leaf, the burden of two ounces of snail weighed down the leaf tip until it rested against the trunk of a sunken cypress that had lost its struggle against age and weather. Long interred in its watery grave, the cypress trunk supported an algae crop that fed a host of small aquatic creatures, including many snails.

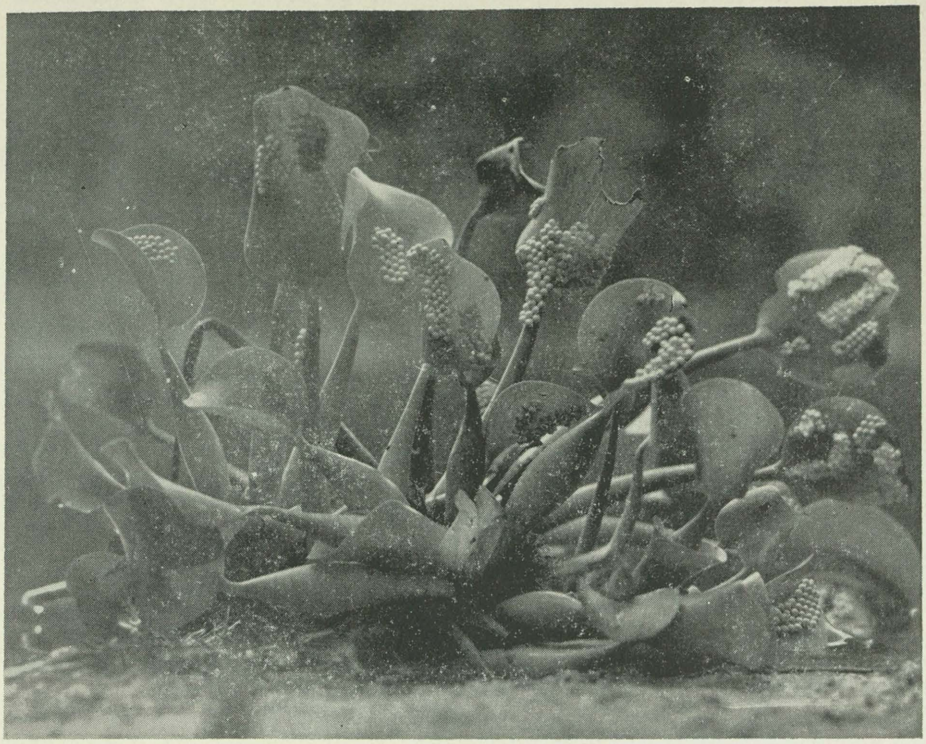
Several minutes and a few inches later, Poma reached the log and turned slightly to crawl along this rich food store. The slow and measured pace was continued. The difference in the leaf and trunk surface was hardly noticed by Poma. Near the front of the flat muscle or foot on which the snail moved was a small gland that secreted a slime. Underwater the highway was invisible, but it was there. Later, when the white moon sliver turned pale gold and then deepened and brightened, when the blue behind it flamed red and then darkened slowly from mauve to purple velvet, Poma would leave its silver road above the water's surface on whatever it visited during the night.

Tonight Poma had a mission. It would be fulfilled, as all Poma's missions were, unconsciously. For Poma was blessed with only enough senses to lead a snail's life. Had it possessed more than enough it would have been unhappy. From a human point of view a snail's lot could scarcely be considered a happy one. Because Poma's real name is *Pomacea paludosa,* the largest fresh-water snail in America, it is a worthwhile meal for most all animals larger than itself. Here in the Wakulla River, Poma is hunted relentlessly, not only by Aramus the Limpkin, but a multitude of other birds, mammals, and fishes. Even small minnows peck at its sensitive flesh when they find it extended from its whorled shell.

Poma's little eyes, located at the base of the long feelers on its head, were not sharp enough to see danger at a distance. Its pace makes escaping its enemies by speed impossible. Only the touch of danger on its long feelers or moist body tells Poma to hide. Only when danger is already present does the big mollusk fold back into the spiraling recesses behind the horny plate pulled into the opening of its shell. Withdrawn into the armor with which it is provided, Poma is at the mercy of claw, beak, and tooth. Those strong enough, shaped appropriately enough, or used ingeniously enough are rewarded with several inches of tender snail meat. Poma's lot is not a secure one.

Nor does Poma know connubial bliss, or the joys and pleasant worries of parenthood. Poma is hermaphroditic, having the organs of both sexes. Mating is a casual affair. Meeting one of its kind perchance on some stem or stob when the tiny consciousness Poma possesses somehow says the time is right, Poma and the other snail exchange sperm. Each is both male and female. The exchange completed, Poma and the other snail continue their solitary ways. They do not recognize each other as individuals before, nor will they afterwards. Poma's lot is a lonely one.

Poma suddenly touched a limb of the water-logged cypress that pointed upward, toward the surface.



The delicate "pink pearl" eggs of the Pomacea snails appear in the springtime just above water level. They are laid on almost anything that protrudes from the water hyacinths and other plants, docks, boats, bridge pilings.

At the touch the right feeler shrank from a long slender inch to a thick stub, wavered a moment and then extended once more to appraise the perpendicular limb. Lost in inquiry, Poma was unaware of the push of the water rushing towards the Gulf, even though the force against its shell or carapace had to be met with an equal force just to stay still. Poma was also unaware of the rich shell-building minerals in the water that were carried out of the limestone deep in the Wakulla earth.

Having found nothing about the limb to cause it to be avoided, Poma started upward toward the line between air and water. Waves of contractions flowed from the front of the gastropod's single foot to the rear of it. Poma moved slowly on, carried by the contractions.

It was quite dark when the top of Poma's carapace broke through the delicate tension that separates Poma's liquid world from its atmospheric one. Poma did not consciously notice the difference, but, nevertheless, the gill-like breathing mechanism that had supplied Poma with oxygen beneath the water's surface was rested and the lung-like sac that took up half of Poma's respiratory area continued the job.

At that fine line between Poma's two worlds, the silver highway the snail had been laying down became visible. If the moon had been older, it would have glistened on the shiny record of Poma's labored journey up the snag. Tomorrow's sunshine would reveal the track and also other evidence of Poma's visit.

About three inches above the water, Poma began the completion of its mission. The proper interval had passed since Poma's casual affair with the other *Pomacea.* From under the shell beside the fleshy body of the snail, a thick heavy mucous began to flow and then a round bead the size of an English pea. It was the time of egg laying. Another and another followed until there were 37 in a cluster on the cypress snag. Each contained an embryo *Pomacea* snail.

Completing another function as unknowingly as it accomplished the function of breathing, Poma moved away from the egg mass. There is no maternal hovering. When the small snails emerge from the eggs they are capable of making their own insecure way. They begin the ardous life as well prepared as their parents, except that their smaller size increased the number of enemies that can devour them. As the years pass, bodies and shells grow together until those that survive reach the dubious safety of about the size of a tennis ball.

When there was enough light to see the steam rising from the molten mirror that moved and twisted towards the Gulf, Poma's eggs stood out as a light blob in the surface mist. Near the shore where the blue flags

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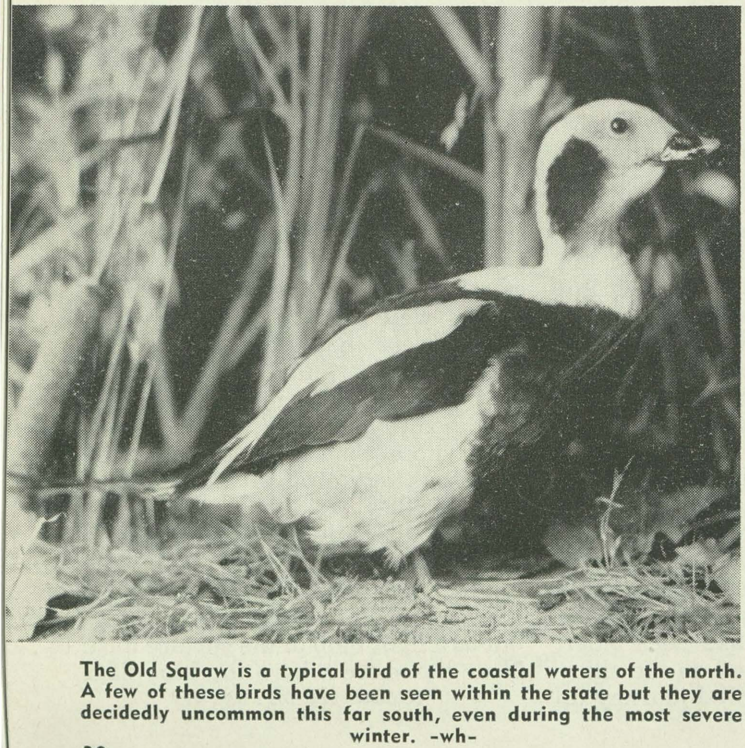
Surf Scoters visit the state each winter but because they are essentially birds of the open salt waters, they are little known to Florida sportsmen. Their distinctive color pattern gives rise to the common name "skunk head." From a painting by Don Eckelberry, National Audubon Society.

Only a few Blue Geese are reported from Florida each season although the Gulf coast of Louisiana and Texas hosts great wintering concentrations of the birds. Most Florida records are from the St. Marks Refuge area and westward. U. S. Fish & Wildlife Service photo by Paul Hoffman.

WEBFOOT WANDERERS

THE DISTANT LAND was a low formless line, misty and indistinct against the rose tinted grayish curtain of the early morning sky. The hunter squirmed about in an attempt to slip deeper into the comforting folds of his heavy gunning coat. The damp clammy walls of the pit blind on the tiny shell and salt grass key made for uncomfortable sitting. The north wind sweeping across the expanse of choppy gray water carried the bitterness of the arctic in its icy breath. It was cold, but the hunter felt a lift in spirits; after days of bluebird weather, here was a dawn that promised to usher in some real deep water duck shooting.



The Old Squaw is a typical bird of the coastal waters of the north. A few of these birds have been seen within the state but they are decidedly uncommon this far south, even during the most severe winter. -wh-

The White-winged Scoter is a bird of the more northerly salt water areas. It is known to Florida only as an occasional wanderer, mainly to the offshore waters. -wh-

A dark, indistinct, undulating blob moved against the whitecapping water toward the southeast. As he watched, the blob resolved into five separate forms. The hunter slipped the heavy woolen glove from his right hand and reached for the pump gun leaning against the side of the pit.

On they came, the rapid, steady beat of their wings propelling the birds directly toward the stool riding the water in front of the blind. Now he could hear the faint rhythmic whooshing of air through the rapidly beating pinions. The birds swung to the side, banking in a wide arc to get downwind from the set. Wings cupped, feet extended, the ducks dropped toward the area of open water in the middle of the spread. The long, slender tail feathers of the lead bird caught the hunter's eye. "Pintail," he muttered under his breath, momentarily pausing in the smooth, practiced swing. The birds caught the movement in the blind and flared. The nimrod quickly decided to take the shot; perhaps the "cans" wouldn't fly today after all. The dull boom of the twelve was whipped away by the rising wind as the load of chilled 6's sent the trailing bird plummeting to the water. With a strong tail wind, the survivors were borne out of range before the hunter could chamber another shell.

A few minutes later, the man reached over the side of the pitching skiff and grasped the floating bird. He could scarcely believe his eyes as he held up for closer inspection an Old Squaw duck, a fowl he knew well from many a boyhood gunning trip along the rocky headlands of Pennant Bay, Nova Scotia. There the Old Squaws hobnobbed with the eiders, the harlequins and other northern waterfowl. But this was Gulf Coastal Florida, a mighty long flight below the usual winter haunts of the garrulous north country bird.

Every season it happens; a hunter or two downs a bird that has defied the edict of tradition that says such and such a species winters no further south than this or that particular place. Actually, some of these wintering waterfowl are more common on Florida waters than may be generally realized but gunners seldom shoot in the particular places these fowl favor. The scoters, for example, stay for the most part on the open, off-shore salt waters. Many waterfowl hunters

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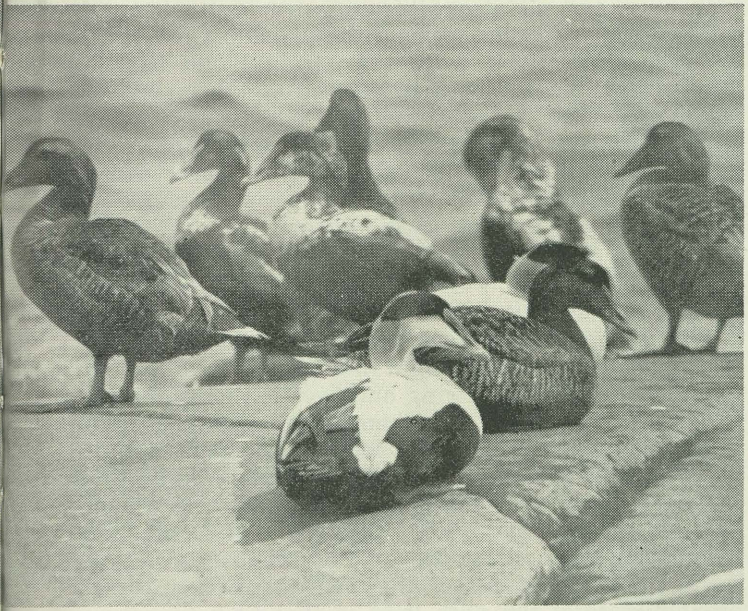
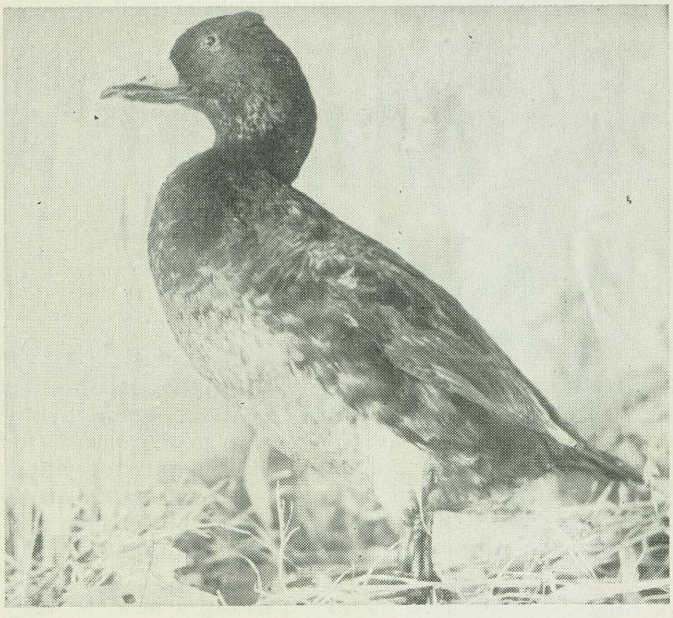


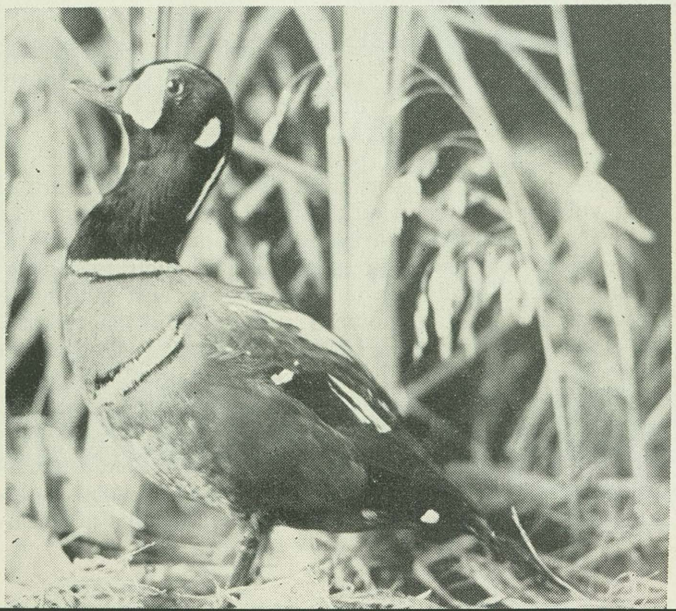
The Eider Duck is another fowl of the far north, very rarely seen as far south as Florida. One was sighted last season in the southern part of the state. Photo by Alfred O. Gross, National Audubon Society.

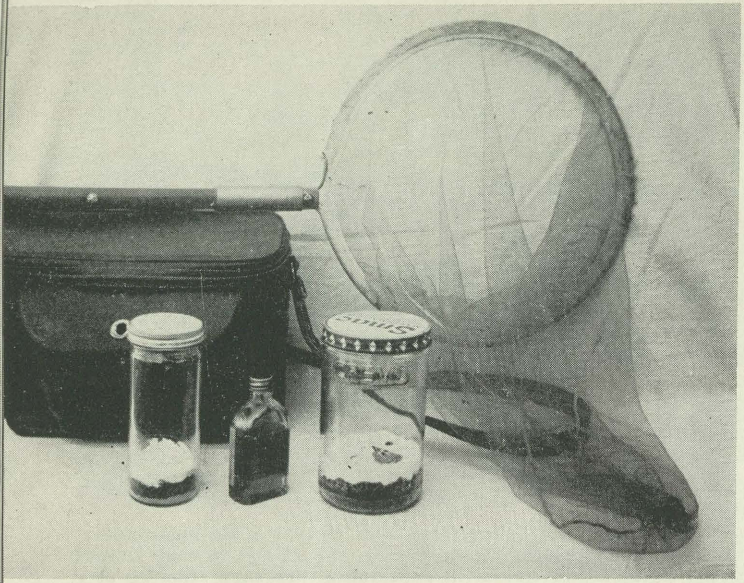
Although the Black-bellied Tree Duck, shown in the photo above, has not been reported from Florida, the closely related Fulvous Tree Duck, a bird similar in appearance, has been reported as a very rare straggler to the state. -wh-



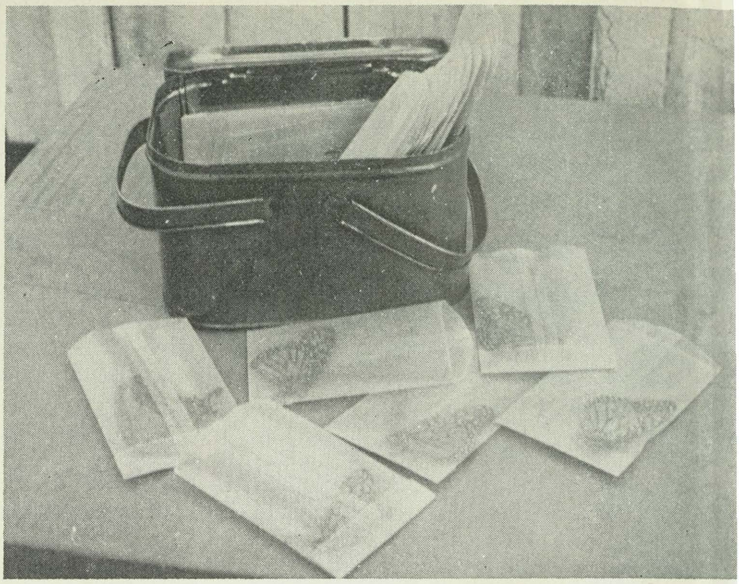
The American Scoter is another bird of the off-shore salt waters. Although it is seen in occasional concentrations off the Georgia coast, the species is comparatively uncommon in Florida. -wh-

The Eastern Harlequin Duck is of but accidental occurrence in Florida. It is a species of the far north and even during the most severe winter weather but rarely ventures south of Long Island, N. Y. -wh-





The collector's field tools consist of a net, killing jars, collecting bag, and often a good supply of mosquito repellent.



When collected butterflies cannot be spread immediately upon return from a field trip, they must be stored in a fairly tight box where they will be protected from ants and other pests.

Collecting Butterflies

By **LARRY J. KOPP**

DURING THE PAST DECADE, butterfly collecting has become an increasingly popular nature hobby for both young and old. There are good reasons for this, of course. For one thing, it is a pursuit which takes you outdoors at a time when nature is at its best; but more than that, collecting butterflies provides thrills equal to those found in hunting and fishing.

There is something about capturing a new, or very rare butterfly that invariably sends a rush of joy through the collector. In a sense, it is comparable to downing your first buck; or catching a large fish.

Moreover, since rare butterflies as a whole are really found unexpectedly, many collectors feel that this element of unexpected surprises is the very essence of collecting.

Then too, it goes almost without saying that a collection of properly prepared butterflies is a beautiful thing to have. And certainly there is no place where one can expect to find more colorful, and a greater variety of butterflies than in Florida.

In addition to these joys, a collection of butterflies can also be very educational. To make a collection most valuable from an educational viewpoint, the collector should always carry a notebook and pencil to record various observations which will include a note of the particular flower on which a specimen is captured; which kind of flowers seem most attractive to certain butterflies; and of course a note should be made of the date and location of capture. The latter can be the name of a nearby town or similar landmark.

Naturally a butterfly would be almost meaningless unless you know its name; Therefore a good field guide such as Guide To Butterflies by Klots is of paramount importance. This field guide may be obtained from the National Wildlife Federation, Washington, D. C., at a cost of $3.75. It is well illustrated with both black and white and color plates which make it possible for anyone to identify all species of butterflies found in North America.

Probably the collector's most important tool is the collecting net. To make a good net, secure the following items; An old broom handle, a 40-inch piece of ¼ inch wire, and about one square yard of green nylon net material. Proceed to bend the piece of wire in the form of a circle, but with two straight and parallel ends. Bend the last ½ inch of each of these ends towards the other.

Next, measure the distance around your wire circle, and if this is thirty six inches, fold the square yard of nylon net directly in the middle, and with scissors, cut an oval end for the net. If the wire circle is larger, it must be made smaller, or one must secure a larger sheet of nylon. The oval end of the net is then sewed along the edges.

The next step is to get a strip of heavy cloth, 36 inches long and about eight inches wide. Fold this twice around the wire ring and sew it thoroughly all the way around the loop. Then sew the net itself onto the cloth around the wire loop. The final step in making this net is to attach it to a handle. To do this, cut narrow grooves along the sides from the cut off end of the broom handle, then bore a small hole through the handle at the end of the grooves. Into these small holes, insert the bent ends of the two parallel ends of the wire loop so that both fit snugly into the grooves, then tape securely with friction tape to hold them in place.

Another important tool is the killing jar, because a butterfly must be killed as soon as possible after being netted to prevent it from damaging its colorful wings. To do this, one must work the killing jar underneath the folds of the net, and towards the butterfly until it flutters into the jar. In a moment the specimen will be stunned by the poison in the jar, and thus perfect specimens are assured,

A good killing jar can be made by taking a quart size glass jar having a wide mouth, and placing about one fourth inches of cyanide in the bottom. This is then covered with a half inch layer of dry sawdust, and finally a similar layer of liquid plaster of paris is poured on top of the sawdust.

When the plaster of paris has become thoroughly dry, you have an effective killing jar that will last a whole year, or longer, depending on how often you use it.

It must be remembered however that cyanide is extremely poisonous, and therefore not always easy to obtain unless you are an experienced collector. A very good, non-poisonous substitute is carbon tetrachloride. This stuff is also sold as cleaning fluid, and to make a killing jar, you merely saturate a piece of cotton and place this on the bottom of a jar. To hold it in place, a tightly fitting piece of cardboard can be placed on top.

The number of killing jars that one needs depends on how much collecting is to be done. Since only one live specimen should be placed in the killing jar at a time, you might need as many as four on a full day's field trip when many butterflies are on the wing. This does not mean however that you could collect only four specimens. Actually, after a butterfly has been stunned in the killing jar, it can be placed into another which already contains one or several. The usual procedure is to have killing jars of various sizes; That is, small jars for small butterflies, and large jars for large specimens.

An old camera bag, or similar, is quite useful as a collecting bag in which to carry killing jars.

When butterflies are dead, they should be removed from the killing jar, and placed into paper envelopes. Any kind of paper envelope will do, and these in turn must be kept in fairly tight boxes such as cigar or similar boxes. Of course if you wish, butterflies can be spread immediately upon your return from the field.

In this case, they need not be placed in paper envelopes. But in most instances, spreading collected material is not immediately possible, therefore the butterflies must be stored safely until the collector finds the opportunity to engage in this important phase of the hobby. Many collectors do not spread and mount their collected butterflies until winter when no field work can be done.

This means that butterflies will have to be relaxed, for you could not spread a butterfly that has become brittle without damaging it. A relaxing can must then be made. For this, you can use an old bread box, or any other tin box which has a fairly tight lid. The first step is to place one or several inches of sand in the box. The sand is then thoroughly wetted, after which a thick sheet of cardboard is placed on top of the sand. A good idea is to punch small holes into the cardboard. To relax butterflies, you simply place the envelopes containing them into this box, and close the lid. Within three or four days the moisture from the wet sand will have relaxed them sufficiently to allow spreading without breaking delicate antennae or wings.

Spreading butterflies is perhaps the most difficult part of the collector's work, but it is surprising how simple it becomes after one has ex-

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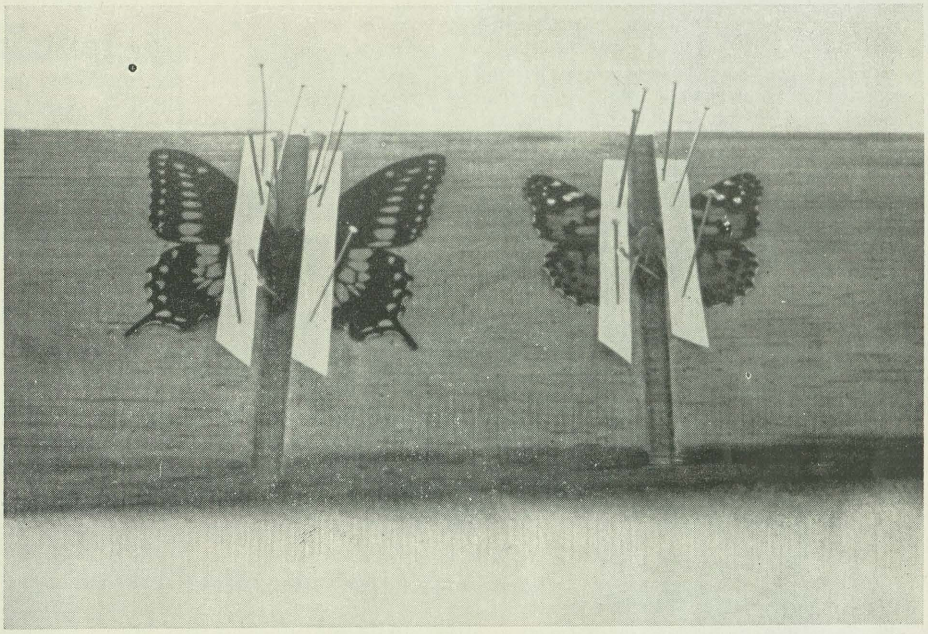
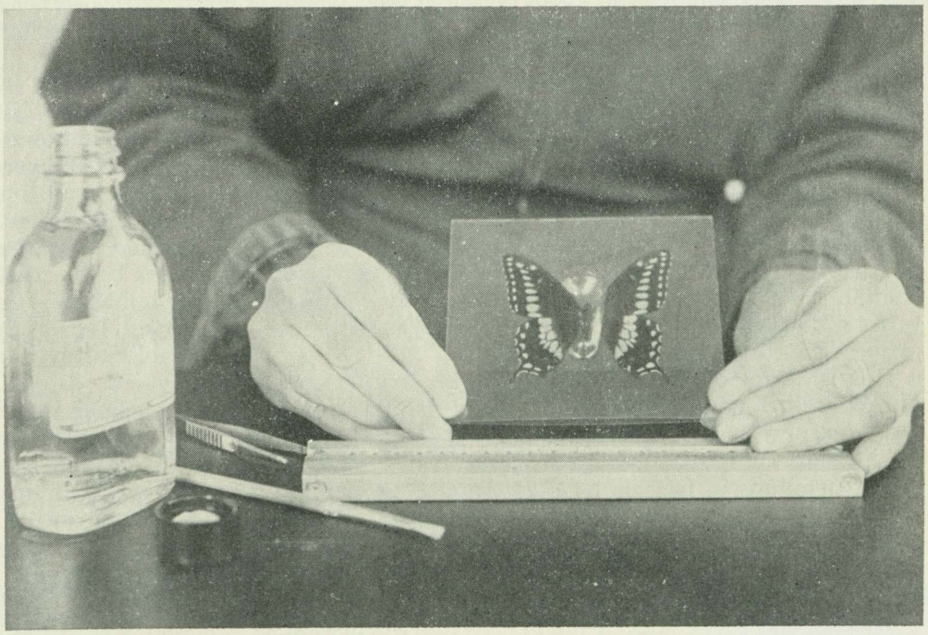


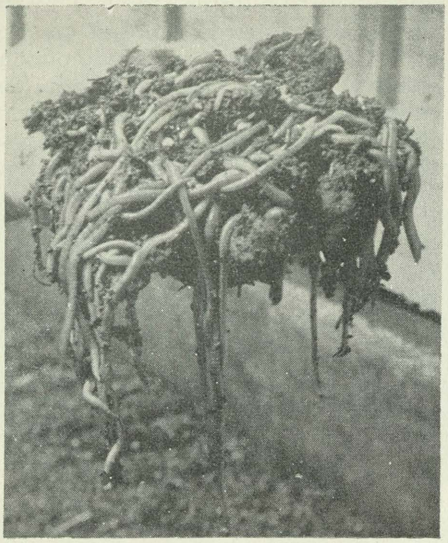
This photo shows two butterflies properly spread on spreading board as described. When thoroughly dry, the specimens are ready for mounting.



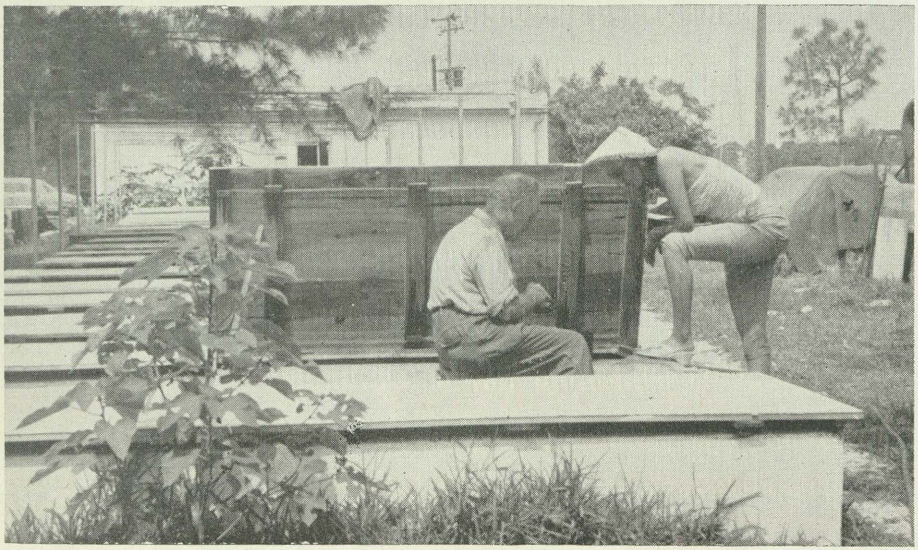
Complete instructions for mounting butterflies in plastic mounts as shown here are included with all purchases of mounts.

SQUIRMING DOLLAR SIGNS

By EDMUND McLAURIN



An earthworm is a bi-sexual animal; any two worms can mate, from one to fifteen worms hatch from each of many eggs after about 21 days.



The St. Petersburg worm-rancher's basic equipment today consists of twenty covered breeding pens, each 12 feet long, 2 feet wide and 16 inches deep. They look like graves in a cemetery and open like caskets.

IF YOU SHOULD EVER appear on a TV quiz program and be asked what bait catches the most fish, you can safely answer "Worms"! Among the smorgasbord of baits which fishermen assemble to tempt fish appetites, worms have rated as an all-time, sure favorite.

To get the squirmers, anglers have long resorted to ambitious digging with a shovel; vibrating a thick board driven two feet in the ground; pouring various chemical solutions on promising spots, and venturing forth with flashlight and pail to graveyards after cessation of a summer evening rain.

But the quickest and easiest way of acquiring the number of worms needed for a day's fishing, anglers have learned, is to buy them from a live bait vendor. In Florida, where almost everyone fishes, the bait worm demands of lazy or time-conscious live bait fishermen have made worm raising big business! Even the yellow, classified business sections of local telephone directories now carry listings under "Bait—Fishing" or "Worms".

Among the more successful of Florida worm-ranchers is Harry C. Martin of St. Petersburg. Martin is considered such an expert in the highly specialized business that other worm-ranchers come to him for both select breeding stock and advice.

Martin began his worm raising venture six years ago with a single breeding tank of Tennessee reds, and gradually filled the other beds as his breeding stock multiplied. It was during the early months of his new enterprise that the worm raiser suffered his major stock losses from sudden drops in otherwise normal Florida winter temperatures and raids by rats and mice. From these losses his present concrete pens, with predator safeguards and built-in heating coils, were developed.

Later, when research had given him a broader knowledge of worm culture and fishermen worm-bait preferences, Martin changed his basic stock to California orchard-worms. He now sells the big reds at a ratio of 500 to 1 over the 2½-3 inch long Tennessees.

Although Martin started his worm business with only four home-made tanks, his basic equipment today consists of twenty covered breeding and housing pens, each 12 feet long, 2 feet wide and 16 inches deep, that look like identical graves in a cemetery and have hinged tops that open like the ones on caskets. Besides being filled with a mixture of two-thirds rich top soil and one-third granulated peat moss, ground decayed hay is added as a supplement three to four weeks after the basic soil is put in a culture pen and leveled. Sugar cane pulp is also a good soil bed additive, since it holds needed moisture until consumed by the worms as food.

Each pen is served by a strategically located water faucet, to help keep the moisture factor of each bed constant and to conveniently wash off removed worms before re-bedding in fresh dirt. A sprinkler-head nozzle on a length of hose gives Martin even, gentle distribution of water. He uses pump water only, claiming that city water contains too much chlorine.

Because his pens are above ground and susceptible to sudden changes in Florida temperature, Martin has had to make provision for their satisfactory operation under adverse conditions. The mentioned controlled water supply and the rainproof covers keep the worm beds from getting either too dry or too wet, and thermostat-controlled electric heating cables under each tank turn on when Florida thermometers register close to a dangerously low reading. A temperature drop under 45 degrees would kill the worms within a few hours; equally deadly is any temperature rise above 95 degrees! Martin says that he has found that his worms seem to thrive best in a temperature bracket between 75 degrees low and 85 degrees high.

As worm authority W. H. Nicolas explained in the National Geographic Magazine a few years ago, "An earthworm's life is spent plowing the ground deeper than a farmer ever tills, swallowing earth in front of it to clear a passageway. Decayed organic matter is digested and the soil itself is enriched by the worm's body. From time to time the worm emerges and deposits enriched earth on the surface as castings. Such undermining has buried buildings erected by the Romans in England and ancient dwellings in Central and South America. In the United States, earthworms are often responsible for the gradual sinking of sidewalks, monuments and similar works. This is not fantastic when one considers that where soil conditions are ideal there may be more than a million worms to an acre."

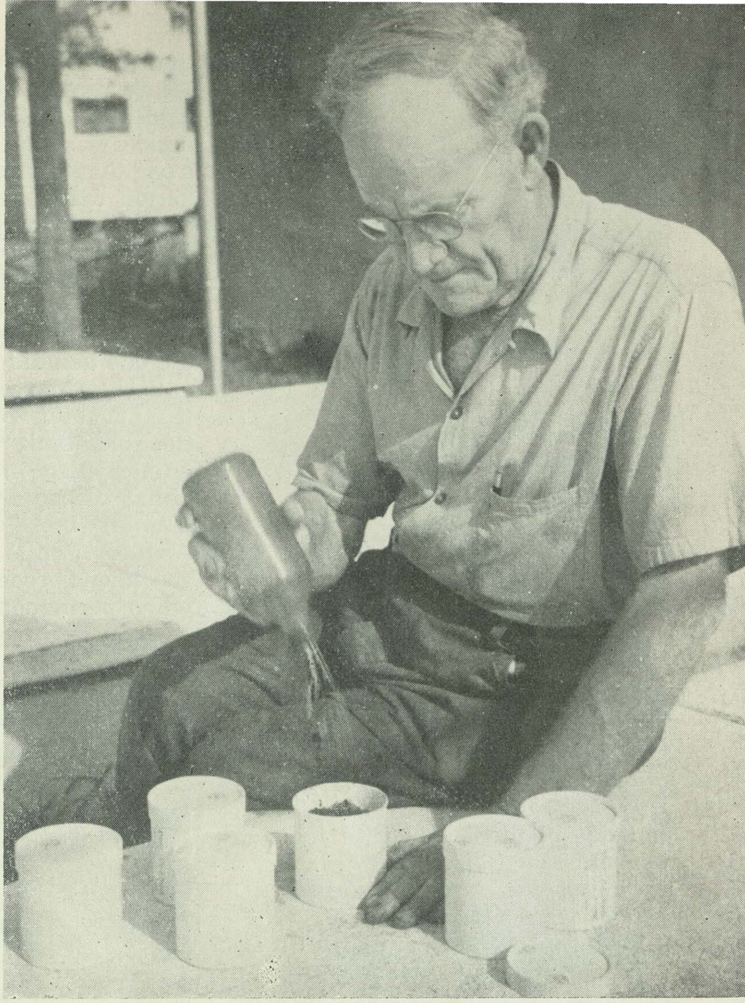
Earthworms have many different aliases; to many they are not known by that proper name at all, but as angleworms, garden worms and, appropriately, fish worms.

The pan fish and black bass delicacies reproduce by laying eggs, the adults being bi-sexual animals; any two worms can mate and reproduce. After about 21 days, one to fifteen very tiny worms hatch from each egg. Four to five months later, given an abundance of nourishing food and protection from predators, the worms will have reached marketable length—roughly about four to five inches for the California variety. While writhing, or twisted in lazy curves, fully grown California reds give the impression that they average only about six inches long; actually, they have a measurable length of up to twelve inches when stretched out fully. Depending on size, 150 to 1,000 worms weigh a pound.

Anatomically, a worm's vital organs—brain, heart, mouth and gizzard—are in its forward section; therefore it is not true that a worm cut in half will live and grow as two separate individuals, Martin says. While the tail half may exhibit wriggling life for several days after severance, the section has no way of feeding itself and gradually dies. Provided no vital organs are injured, the head half will usually live but will not grow a new tail. But worms with two tails adjoined to a single body and fed by one mouth are not uncommon.

Worms breed the year around and each worm will have around 150 progeny a year; consequently, a worm raiser's stock increases rapidly. Martin's No. 1 pen, re-established last October with 750 selected worms as breeding stock, now contains an estimated 50,000 to 90,000 worms despite the fact that since its establishment he has sold approximately 45,000 worms, the equivalent of a five gallon container filled solid with worms!

But the penned worms usually do not remain in their respective community houses from time of hatching to the day they are dug for their purchasers. For sanitary reasons, worms must be changed to a fresh tank and fresh dirt every six months. As dug and transferred, each lot is cleaned—a few worms at a time—by washing before being released in their new homes. Were they to remain too long in one confined location, the crawlers would gradually die off because of sour, poluted soil.


Martin's fish bait worms are damp-soil-packed in paper ice cream containers. Each cup contains fifty worms. Chicken mash food and water are added to keep the worms well nourished and lively.

An additional danger to the peaceful earthworms are grayish-white mites about half the size of an ordinary pinhead that multiply alarmingly and gradually take on a reddish color. When their numbers reach astronomical figures, Martin must wash all worms in the invaded pen and transfer them to clean soil beds. Since the worms tend to burrow deep and the mites cangregate by millions on the soil's surface when pens are covered, Martin takes a weed-burning torch and gives the myriad nuisances a quick "hot foot" within seconds after removing a pen's lid, before the mites can disappear into the soil.

Although a passing flock of shiny-feathered starlings or hungry robins would steal a bountiful meal from any worm pen inadvertently left uncovered, Martin's worm losses to birds are negligible. In one instance he has found a trusted friend among the neighborhood birds. On days when he works quietly at a single pen, stirring up the dirt or otherwise maintaining salubrious conditions for his imprisoned crawlers, a red-winged blackbird flies to the opened pen and starts feeding—but on small insects and mites, never a worm! Martin says that the bird respects his complimentary meal-ticket and never violates its privileges. Once, Martin relates, he thought his winged friend was going to succumb to temptation and take a worm crawling up

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Penned worms are fed daily, each tank being allotted about 1½ pounds of powdered chicken feed mash.

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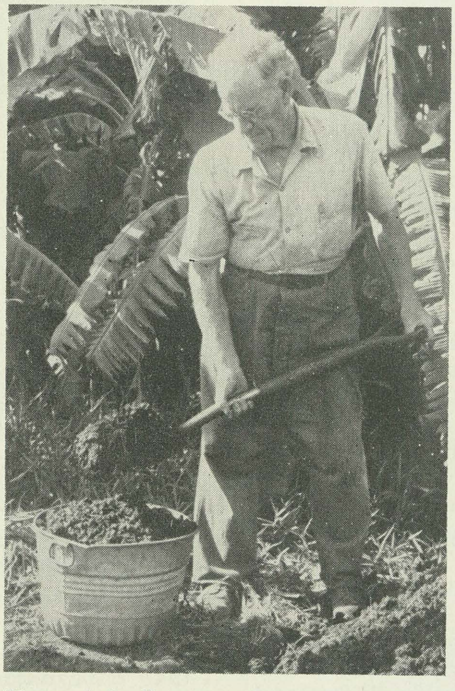
the side of the pen, but at the final moment Martin saw that "Blackie's" objective was not the worm but a doomed insect alongside!

Of far more concern to Martin are predatory field rats and mice and occasional columns of raiding army ants. To discourage the former, heavy wire mesh is tacked around the edges of each pen's heavy cypress lid to keep out all but the most resolute rodents. Dusting the ground immediately outside each pen with pyrethrum or derris powders will keep out ant pests, but Martin's defense is visible examination of pens daily and an ever alert eye for forming ant columns. Users of elevated, four-legged rearing pens commonly out-general enemy ant armies by placing the legs of each pen in cans of drained crank-case motor oil.

Martin spends much of his free time studying his stock. To him, the movement of life within an individual pen is like automobile traffic on a through Florida highway. The moment he removes a cover from a pen, Martin is subconsciously aware whether or not worm life and pen traffic are normal or some unusual condition has developed. What would appear to a casual observer to be just a bed of dirt with a few visible worms on its surface, tells Martin much.

An example of his intensive study and acute observation was when worms taken from a certain bed showed unexplained excitability. Martin tested the soil but could not find any uncommon chemical condition nor the presence of worm-irritating mites in greater than tolerated numbers. But one thing he did notice was that single worms lifted from that particular bed for examination made a sudden, pronounced contortion whenever he picked them up with tails still touching the dirt's surface. He made the same patient observation and test at each of the other beds and found that only in the one bed did the worms act so peculiarly. Martin then took some of the neurotic worms from the questionable tank and used them as guinea pigs in the others. When either placed in the soils of the remaining beds or touched to their surfaces while handheld the test specimens reacted normally. But when permanent resident specimens were taken from normal pens and temporarily placed in the pen under suspicion, these individuals showed definite neurotic reactions to their new environment. Martin then knew that some unusual condition in the one bed had a peculiar, unexplained effect on its worm residents. Although he had felt no electric charge himself, he correctly concluded that his worms in that one bed were being affected by some electrical current. A subsequent line-voltage loss check showed a very slight short circuit in the heating cable serving that particular pen; only Martin's patient observations and research found the logical cause and remedy!



Dirt periodically removed from worm-housing tanks represents rich fertilizer filled with thousands of worm eggs and soil-tilling worms of all sizes.

Worms delivered to consumers are hand-picked for size and closely examined to be sure they are in good condition. A day's estimated supply is harvested and damp-soil-packed in paper ice cream containers. Each cup contains fifty worms. At the time of sale, cups are emptied to show the customer exactly what he is getting and to make a final check on the condition of the baits. Chicken mash food and water are then added, if needed, to keep the worms well nourished and lively. Martin takes pride in seeing that his customers get only the best and liveliest worms.

Martin says that many of his steady customers have found his worms are equally good for such salt water species as sheepshead, mangrove snapper, flounder, trout and redfish as for fresh water bass and bream. While ordinary Florida nightcrawlers die quickly and are comparatively inactive in both fresh and salt water, the ranch-grown California orchard and Tennessee wiggler species will squirm livelily on a hook for an assured minimum of fifteen minutes in salt water and two hours in fresh, properly hooked.

Fishermen are notoriously individualistic in temperament and ideas —which is why more fishing tackle is manufactured to catch fishermen than fish! Martin says that their piscatorial idiosyncrasies extend even to fishing worms. Some will use only small Tennessee reds or an exact length of the California orchards. But personally, Martin confides, he prefers the largest, liveliest and juiciest worm he can put on a hook, believing that fish, like humans, will be more tempted to sample an especially attractive dish than

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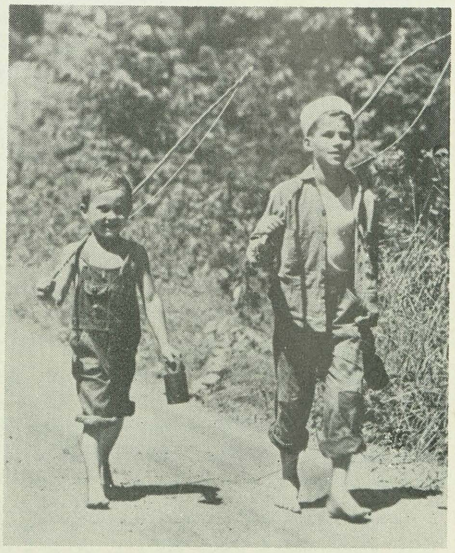
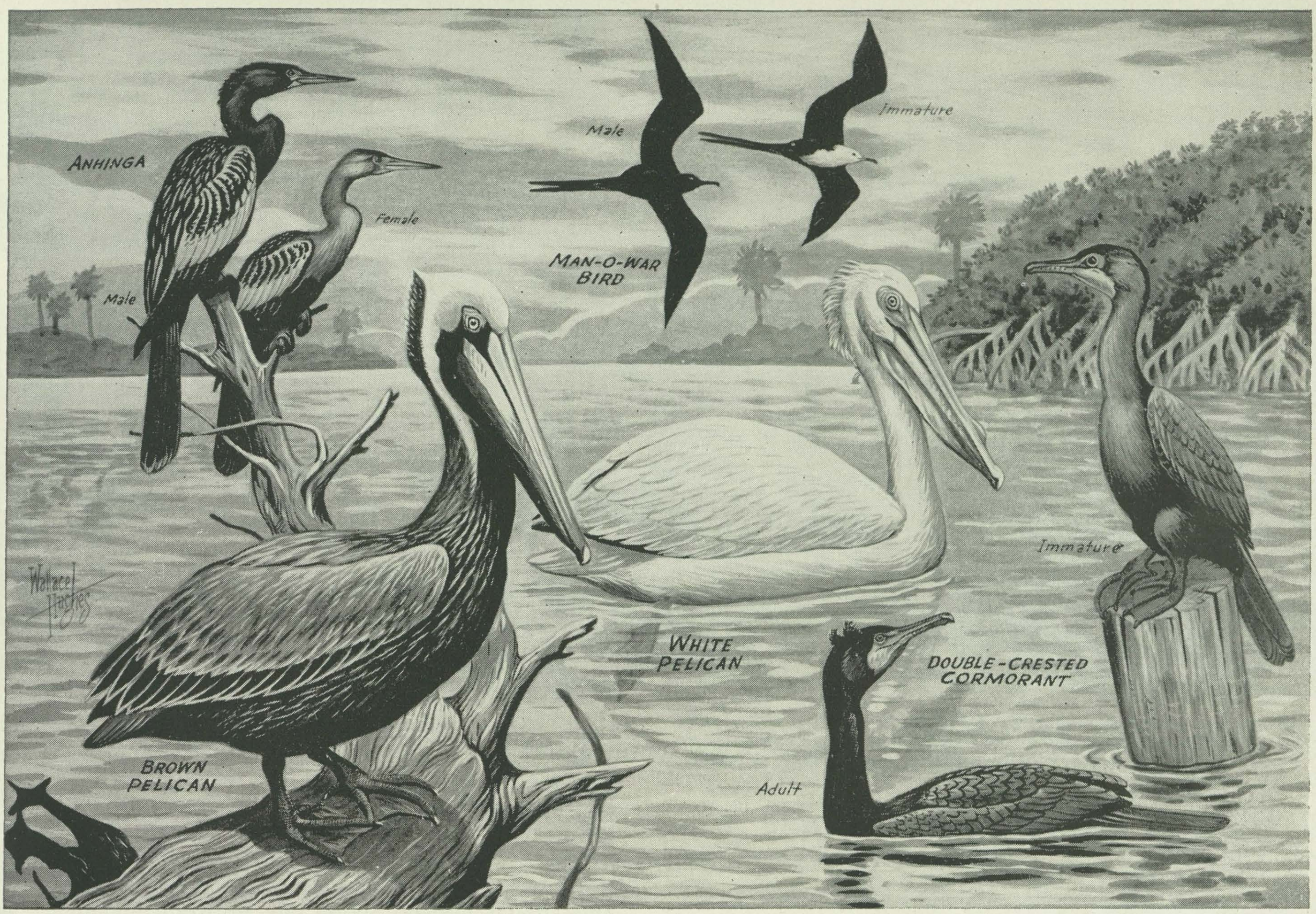


A tree-limb pole, a piece of string, some small hooks and a can of fat worms, and these two Florida youngsters are on the way to their favorite fishing hole.

FLORIDA BIRDLIFE---



White Pelican, *Pelecanus erythrorhynchos.*

Occurs throughout the state as a regular winter visitor although some nonbreeders remain the year around. Plumage of the adult completely white except for the primaries and about half of the secondaries which are black. Young birds are similar in appearance but have grayish rather than white lesser wing coverts and a brownish-gray crown. Bill and feet orange-red to yellow.

One of Florida's largest birds, having a wingspread of from 8 to 9 feet, secure their food by herding schools of fish into shallow waters where they scoop them up with their huge, pouched bills. Food consists of small fish and other aquatic animal forms.

When traveling, they fly in straight line or V formation, alternately flapping and sailing.

Eastern Brown Pelican, *Pelecanus occidentalis carolinensis.*

Large bird with wingspread of from 6½ to 7 feet. In flight, identified by the large bill and slow steady wingbeat alternated with periods of sailing. A year around resident of Florida coastal waters. Nest in large colonies, usually on small islands along coast.

Breeding plumage silvery gray above, underparts gray brown, neck brown with whitish stripes. Winter plumage similar except for neck which is white.

Feeding birds make spectacular dives, angling into the water with a great splash.

Double-crested Cormorant, *Phalacrocorax auritus auritus.*

Large, black-plumaged bird with longish tail and long neck. In flight the outstretched neck is held above the horizontal. Flocks fly in long strings, sometimes mistaken for geese, although the occasional sailing periods while in flight distinctive.

Fairly common winter resident of state. Cormorants feed extensively on both fresh water and marine species of rough or scrap fishes which they obtain by diving from the surface.

Water-turkey, *Anhinga anhinga leucogaster.*

The long, slender bill, the long, snake-like neck, and enlongated, fan-like tail identify the water turkey or anhinga. Plumage of male metallic greenish black except for the wing coverts which are marked with light gray. The female presents a similar appearance except for the head, neck, and breast which are a grayish buff.

Occurs throughout the year in all parts of the state. Nests in trees at varying heights above ground. Feeds on fish and other aquatic life.

Man-o'-war bird, *Fregata magnificens.*

Extremely narrow wings and deeply forked tail make this an easily identified bird. Plumage of adult male glossy black; of adult female dull black with white breast patch. Young birds dark brownish with white head and underparts.

Typically a bird of the tropical seas, the species is a frequent visitor along the coast. They are exceptionally adept awing, sailing majestically for hours without apparent effort. They obtain a great deal of their food by robbing gulls, terns, cormorants, and other birds and by picking up fishes, jellyfish, and other marine creatures from the surface of the ocean. —M.H.N.— END.

The pocket gopher is commonly called salamander in many parts of the southeast. The animal has cheek pouches or "pockets" in which it carries food to be stored in special underground chambers. Audubon Society photo by Maslowski & Goodpaster.

THE MINER

ALL IN ALL it had been a bad day for the hunter. The first thing was his buddy's last minute decision not to join the quail hunt. The second thing was the extreme dryness of the high pine ridge which meant the birds left little scent and the brush and leaves crackled loudly underfoot. And then the third thing was Buck. That promising puppy of last season had shown himself to be the unpromising novice of this one.

Not having anything with which to compare his field performance, Buck thought he had been wonderful. Wriggling and hassling happily, he clammered unabashed onto the back seat. The dog's unflagging enthusiasm was communicated to his master who, though sorely disappointed in Buck, immediately began to find excuses for him—a thing not infrequent among quail hunters and their bird dogs.

Shifting into reverse, the hunter backed his car up to get enough room to turn around. The right rear wheel dropped down about a foot and there was a dull thud accompanied by a frame-jarring percussion. The hunter shot the gears into low and jammed down on the gas. The left rear tire spun and sang a song of futility and burning rubber. All in all it had been a bad day and it wasn't over yet.

The hunter got out to survey the situation as the sun fired it's farewell salute high into the sky. The rear right wheel was loosely suspended in a small mound of yellowish sand out of which the bottom had seemingly dropped. The wheel was held up by a low stump on which the rear axle rested securely. Mentally the hunter ran through his vocabularies for both mixed and unmixed company, using invective adjectives to modify the noun "salamander." He looked around and a score of other low sand hillocks caught the last red rays of day and winked back—almost maliciously.

Taking advantage of the afterglow, the hunter began to look around for limbs to plug the hole. Buck, who had climbed over the back of the front seat and jumped out the driver's door, thought this a great new sport and threw himself into a series of heavy-footed contortions, mostly U-shaped.

A couple of feet beneath Buck's antics, Geomys stirred in his bedroom and decided it was time to begin his nocturnal activity. Geomys was unaware of the events transpiring above his labyrinth of tunnels and of the wheel now blocking one passageway. He was also unaware of the venomous thoughts being projected in his direction by the hunter. Geomys was the pocket gopher (*Geomys floridanus*) that had dug the tunnel. Like most Floridians, the hunter called him a salamander, a name supposedly derived from the "sandy mounds" the gopher throws out of his borrow.

As the hunter looked for limbs, Buck scouted this way and that, a little puzzled as to what quarry he was supposed to be seeking. His master's mood was foul, that much Buck knew, but the reason was a mystery to him.

In sandy soil, the pocket gopher is capable of digging from two to three hundred feet of tunnel in one night. Excavated earth is pushed up on the surface to form the typical mounds. -mn-

There was mystery underground too. Geomys highly sensitive nose told him something foreign was in his house not far away. It wasn't vegetable smell or insect smell. Neither did it have the musty smell of of snakes and danger. Not only was it completely new to Geomys, it was also new to the whole store of gopher instincts Geomys possessed—the instincts that told him what to do when he was unable to draw on his own experience.

Nothing told Geomys to run away from the smell and his curiosity got the better of him. As he approached the origin of the smell, however, apprehension was born. Perhaps it was the fresh air pouring into the tunnel around the tire. Fresh air meant holes in his underground fortress. Holes meant enemies.

Geomys never got to the tire. Just before he reached it he began a new side tunnel. His speed was astounding. Between sunset and sunrise Geomys was perfectly capable of digging from two to three hundred feet of tunnel in the sandy soil. It would be comparable to the hunter digging a trench 17 inches in cross section and 7 miles long in the same period.

The gopher spread his hind legs wide apart and attacked the sand with downward strokes of his powerful and sharp-clawed hands. His little eyes were tightly closed and the lids fit closely to prevent grains of sand from getting inside. The end of each stroke pushed the loose soil under his belly. After several strokes, Geomys kicked the small pile of dirt further back with his hind feet. When a cup or so of dirt had been thrown behind him, Geomys went through an amazing contortion. He stuck his head down between his hind legs, flipped his hind legs up and over at the same time he twisted his body horizontally. By this gymnastic he was rightside up and facing in the other direction. Geomys brushed himself quickly and the sand fell away from his slightly oiled fur without soiling it. The valves that had closed in his ears to keep out the sand opened.

Like a little one pound bulldozer, Geomys approached the pile of loose soil with forelimbs spread and chest pressed against the tunnel floor. His sturdy little hind legs did the pushing and Geomys shoved the dirt out of his new tunnel, turned and piled it in the part of the old one leading to the automobile tire. Without wasting time, Geomys returned to his digging and repeated his actions until the old tunnel was well plugged.

The hunter had found an armload of solid lightwood knots. With Buck scampering ahead he returned to the car, dropping his load by the stuck wheel, opening the trunk and took out the car jack. Geomys, meanwhile, had finished his by-pass tunnel and had firmly plugged the old tunnel on either side of the place where the car wheel had broken through. Unplugged or loosely plugged holes are an invitation to danger. A pocket gopher's sweet meat is a treat for bull and king snakes and they will examine the small sand mounds where the gopher dumps his excess soil in hopes that the little fellow had been careless in placing that last handful of dirt with which he plugs up the hole.

Feeling safe once more, Geomys set off on his nightly touring and tunneling in search of food. In a crouch he ran down his network of tunnels until something indicated food might be in another direction. In a flash, Geomys had begun a new tunnel towards food. Before long he was pulling at the slender roots of the rough grass. Having bitten off a long root with his sharp incisors, Geomys began stuffing it, end first, into the fur-lined pocket that gave him his name. The pockets began near the corner on each side of his mouth and ran all the way back to his neck and shoulder. When the end of the root reached the end of the pocket, the root began to coil around until the whole long piece was neatly stored.

Next Geomys found a tuber. Though small, it was still too big to fit into the pocket. He ate it on the spot. It was a rich food tunnel and in a little while Geomys had both his pockets full. He backed out of his new tunnel with his hairless and very sensitive tail tip exploring the way, warning him of all irregularities. Once out he raced back the way he had come, using the new by-pass around the car wheel.

The hunter would have been surprised if he had

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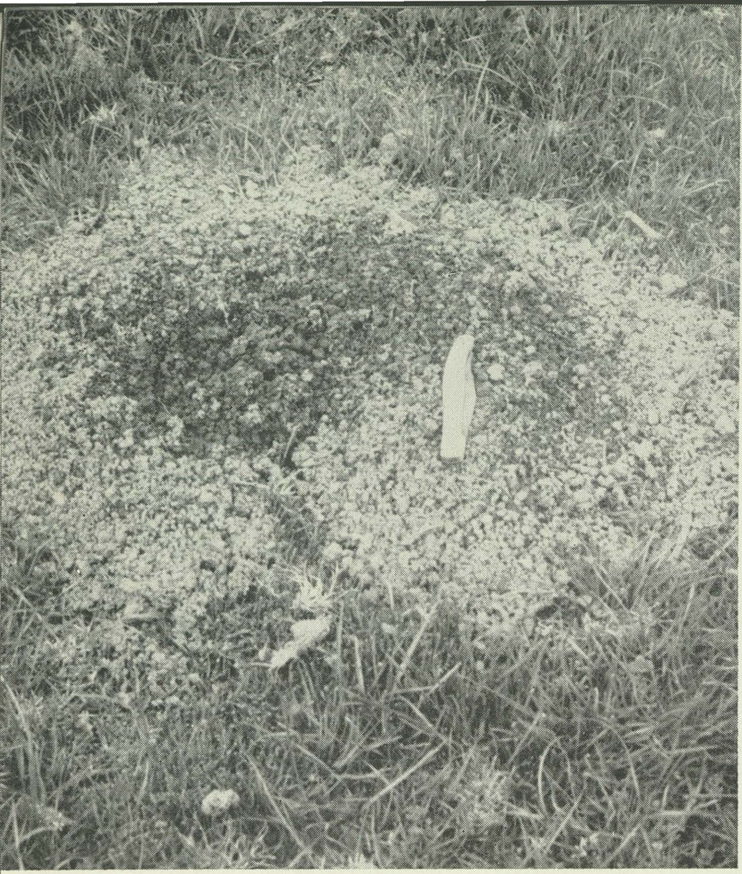
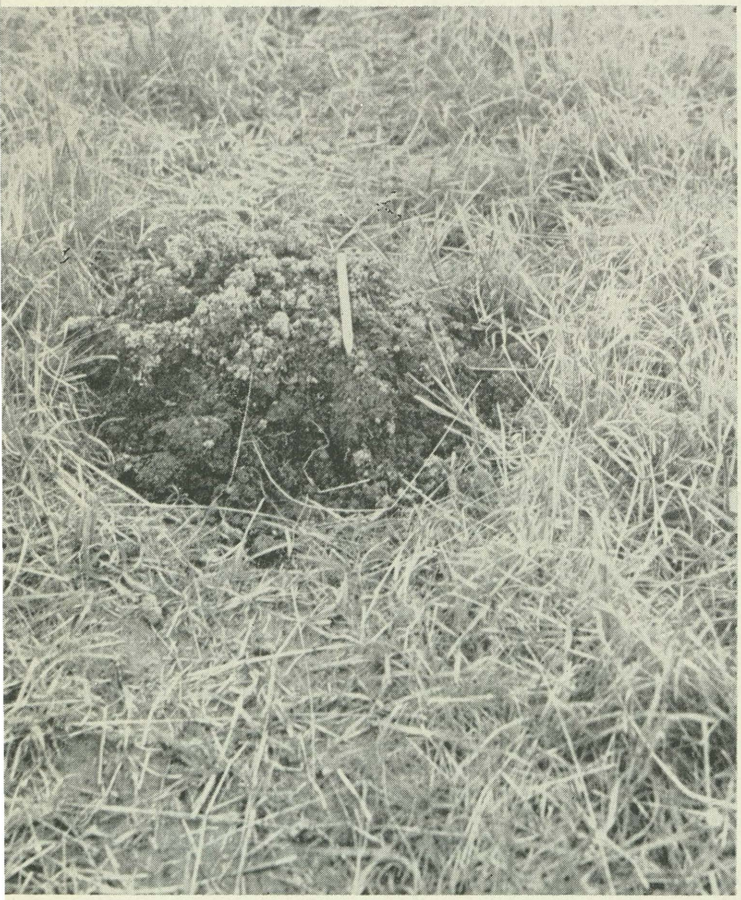


A typical pocket gopher mound is horseshoe shaped in general outline. The earth loosened by tunneling is pushed out from three sides of the burrow, giving this characteristic appearance. -mn-



The mole, another underground dweller, pushes the loose earth from its burrow in such a manner that it falls equally on all sides. This creates a cone-shaped mound with the burrow directly in the center, similar in cross section to a miniature volcano.

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known the much profaned salamander passed directly beneath his knees. He was kneeling down now, trying to fit a pine knot under the jack which he had had to move from the rear bumper to under the axle between where it rested on the stump and the wheel that hung in the hole. Buck had decided this was not a very amusing new game. The moon was coming up and Buck was hungry. He wondered how much longer his master was going to continue this silly game.

Geomys was hungry too, but his gopher instinct would not let him eat everything he gathered. In fact, to satisfy his appetite Geomys always had to collect much more than he really wanted to eat. What was not eaten he carried to one of his storerooms of which at the moment he had five. He also had the untidy habit of not only eating in bed but taking more to bed with him than he would eat. Eventually this messy habit would mean Geomys would have to make a new bedroom. Already spiders, mites, and beetles that feed on decaying vegetable matter were increasing to the point of being bothersome bed-fellows.

Geomys would one day soon have to excavate a new bedroom and gather grass from the outside world above his tunnels for bedding. But for now, Geomys just collected more food than he could eat and stored it away. The coldest part of the winter was yet to come, and though Geomys would not hibernate, food would become scarcer and he had to lay in a supply. With the big eyes of a child in a cafeteria line, Geomys also stored much more than he would ever eat. In doing so, he performed a service. The rotting vegetation he stored added to the fertility of the soil. The incessant digging and tunneling mixed and aerated the earth. This made him a useful animal even though the hunter would, at the moment, have disagreed heartily.

Geomys, on one of his busy trips from food source to food storage, stopped by another type room of his house—his bathroom. Although Geomys ate in bed he never wet it. He had a special room for that and when the room got too foul, he filled it up and made another one.

With the car jacked up the hunter pushed the pine knots down into the loose sand under the raised right wheel. Still dubious, he gently lowered the car. It seemed to hold and he was glad for over and over his mind dwelt on the anxiety his prolonged absence was causing his wife. Supper would be getting cold and she would be watching out the front window for his car to turn the corner. Buck seemed to share his worries, for he whined deep in his throat. Maybe he was thinking of the yellow bowl of food or his warm kennel.

Unlike the hunter, Geomys had no mate to share his quarters or his work. Like others of his kind, Geomys lived alone and would have fought any intruding gopher to defend his house and network of foraging tunnels. But it was late fall. For about a week, Geomys had felt faint urgings to leave the safety of his burrow and go in search of a female. It would be a dangerous trip for Geomys for his enemies increased above ground—the fox, the skunk, stray house cats, and some owls and hawks. But dangerous or not Geomys would go. The urge would continue for several months because Geomys might not find a mate on his first trip above ground. The female gopher would remain in her own house and it would be up to Geomys to seek her out. But Geomys' mate would not be won through the elaborate courtship the hunter had not only endured but enjoyed in winning his wife. By some mysterious sense, Geomys would be able to tell when he had found a female's burrow and would enter. If she had not been visited earlier by another male, Geomys would stay.

The hunter put the jack in the trunk, opened the car door for Buck and himself. There was the welcome roar of the engine which he let run a few moments before he cautiously slipped the gear into low drive position. With a silent prayer he pressed slowly but firmly on the gas. A quick lunge and grating sound as the axle came off the stump. The man and the dog were on their way home, leaving the pine forest to Geomys and glad to do so.

Geomys pushed aside the last bit of dirt in a new tunnel and emerged from the ground. Something told him in what direction he must now go and off he went, scurring between the cover of clumps of wire grass. How Geomys told when he was above the female's tunnel was a puzzle. But before long, burrow down he did.

The female knew almost at once that another gopher had entered her underground house. If it had been at any other time of the year, she and the intruder would have fought to the death if necessary. Geomys found her near one of her storerooms. By her manner he knew she had not been visited before this season and that Flori would let him stay until they had completed a successful mating.

Sometime later, Geomys left his mate and returned to the seclusion of his own house. Chances were great that he would not see another gopher until the mating season the following year. He resumed the daily routine of sleeping, digging, eating, gathering and storing. It was also likely that he would never see the offspring he sired.

The female, Flori, with whom Geomys had mated, started in a few days to prepare for her coming young. For almost four weeks she was busy gathering and storing even more food than usual. She examined her nest and decided that a new one was in order. After hollowing out a new bedroom about nine inches in diameter, she ventured above ground on two dark nights to get dry leaves. These she shredded until they made a soft, almost fluffy bed to receive her young.

As the new year arrived, so did the offspring of Geomys and Flori. There were four of them, three females. Flori did not see them in the darkness. Her knowledge of them was smell and feel. She did not see their fat little bodies and short limbs and tail all encased in naked dark pink skin that was almost twice too big and hung in wrinkles and folds. They weighed about a fifth of an ounce apiece. The cheek pockets for which they were named were just little lines in the skin. The brother and little sisters were almost a month old and eating green food before the pockets were big enough to be called such.

Flori fed her brood from the store she had collected and from freshly gathered vegetation until they opened their eyes. This great event happened when they were about five weeks old. Actually, it meant little to them for there was nothing to see in their dark home. However, they began to forage for food on their own, using their mother's tunnels. For two or three weeks they enjoyed this life of comparative ease. They were not quite two months old when they went into the world. The companionship of the litter abandoned forever. The male, except for mating, and the females, except for mating and rearing their young two months of the year, would be and prefer to be strictly alone.

Geomys' son was the first of the litter to venture forth. On a cloudy night in mid-January he pushed aside one of the blocking plugs to his mother's burrow and scampered away above ground to find a deserted gopher tunnel. Near a clump of wire grass he came upon an excess mound that seemed to be quite old and started digging. As he dropped from the spur into the main tunnel his nose told him he was wrong. Before the young gopher could correct his mistake, an older gopher approached face to face. Young Geomys flipped in a somersault with speed and agility and sought the way he had entered, but not before old Geomys had nipped him with those strong chisel-shaped teeth. The speed with which the adolescent raced down the tunnel almost made him miss the spur, but he made it. The mature gopher plugged the hole by which the young one had entered and then resumed his foraging and burrowing. Geomys had met his son without recognition. The offspring was only another gopher to be driven away.

The would-be intruder crouched in the wire grass a moment to get over his fright and when his heart stopped pounding the experience was forgotten. Only the rule of gopher conduct, "don't invade another's territory" remained.

Not having found a deserted burrow, Young Geomys went a short way and began to excavate his own. Before he had dug more than a few feet, his tunnel pushed through into another of his father's runways. Quickly, Young Geomys filled the break and changed the direction of his digging.

When daylight came he settled down to sleep. His tunnel was a short and shallow one, but it was a start. It would grow and grow with time until it was as complicated as his father's. In time when the Old Geomys died, either from old age or in the mouth of some predator, his son would probably join the older tunnels with his newer ones. In this manner Geomys would leave his son an inheritance, not because of family ties, but just because they happened to be neighbors. And like his father before him, young Geomys would live out his lonely life here on the sandy ridge of pine forest.—MLN. END

"Why don't you take the day off and go fishing? All right, I will."

The famous Douglas fir tree is not a fir tree. It is a false hemlock. Neither is the red cedar a cedar. It is a true cypress.

A nature made tunnel, 40 feet long, five feet high, goes through a hill at Florida Caverns State Park, Marianna, Florida.

COLLECTING BUTTERFLIES

(Continued from Page 33)

perimented with several specimens. To begin with, you will need a spreading board. Such boards can be purchased from scientific supply houses; or you can easily make your own. To make one, select a piece of white pine, or other soft board about eighteen inches long, and approximately five inches wide.

The next step is to cut grooves, crosswise into the board. These should range in size from one eighth to about one half inches in both width and depth. To make them, you can use a saw and chisel. Once the grooves have been cut, the entire surface of the board must be well sanded so that butterflies can be spread easily without fear of damaging the fragile wings.

To spread a butterfly, you stick a pin through the thorax and pin the specimen fast in one of the grooves. This will hold it in a fixed position while the wings are being spread. The next step is to place a strip of paper over the butterfly's wings as shown in the accompaning photograph. First you pin the paper strip fast at the top, that is, just above the upper wing; Then while holding the strip with your left hand, use a long needle to push the upper wing up until its lower edge forms a right angle with the body. Next, the lower wing is pulled up until about three quarters of its top edge is hidden underneath the upper wing. When this has been accomplished, the paper strip is pinned down fast with a second pin just below the lower wing. After both sets of wings have been spread in this manner, the pin holding the butterfly in the groove must be carefully removed. To do this place a ruler, edgewise across the thorax of the butterfly but right against the pin, and in this way hold the insect down while turning the pin lightly—and pulling it up at the same time.

Spreading boards containing butterflies must be kept in a dry place where no ants can reach them. When thoroughly dry, they are ready for mounting.

There are several ways that butterflies can be mounted. The oldest method known among collectors is to place them in riker mounts. These are composed of two parts. The bottom part contains a layer of soft cotton upon which the butterflies are neatly arranged. The top part is a box-like lid containing a clear sheet of glass which is placed over the butterflies.—This presses them against the soft cotton, which in turn prevents them from shifting out of place once the whole mount has been sealed together.

Such mounts are made in varying sizes, and can be hung on a wall if desired; or stored in cabinets. They may be obtained from the same scientific supply house mentioned previously.

However the most modern method is to mount butterflies in transpar-mounts. These are simply two identical sheets of transparent plastic which, after the butterfly has been placed between, are sealed together permanently with acetone applied with a small brush. They are manufactured in varying sizes so as to accommodate all species of butterflies, and since each butterfly is mounted individually, special panels are also made for the purpose of displaying, and storing your collection. Two outstanding features about these plastic mounts are that you can view a mounted butterfly from both under and upper side; And if you wish, you can trade individual specimens with other collectors.

Transpar-mounts may be obtained from the Butterfly Collection Supply House, 539 Walnut St., Irwin, Pa. Complete instructions for their proper use are included with all orders. Costs for these mounts range from ten cents each for small mounts to twenty-five cents each for the very large size. Interested readers should write to the afore mentioned supply house and request a price-list and further details.

There are also less expensive, though not so permanent ways of mounting butterflies. For example, they may be mounted on insect pins stuck in a box lined with sheet cork. Another idea would be to mount butterflies under glass against a double layer of cardboard with slots cut in the top layer to accommodate the body of specimens.

Just where one should collect butterflies is not much of a problem since they can be seen flying almost all over the landscape. Probably one of the most fruitful collecting spots can be found right at home among the garden flowers.

Some butterflies prefer to fly along woodland trails. Others like to flit about in old fields, and the alert collector therefore searches everywhere. END

Florida butterflies, collected and shown here by the author's sister, are mounted in transpar mounts and properly placed on a special display panel.

20,000 YEARS

(Continued from Page 11)

The Indians found useful for house wall construction and the making of baskets, blowguns, mats and other objects, the cane that then grew in abundance. Present day Seminoles still use it for baskets and the Cherokees of the Carolinas yet use cane blowguns for hunting small game.

With the development of Florida as an agricultural and cattle raising state, the natural range of wild animals and plants has shifted, often becoming more restricted. In prehistoric times man occupied relatively minor portions of the land. The villages were, for the most part, along watercourses and along the coastal shoreline. It was only after the introduction of agriculture that man moved inland.

We know from evidence left by the early inhabitants that prehistoric Florida was one of the two most heavily populated areas in North America. The other was the region around San Francisco Bay. However in those times there existed among the various living species a natural balance that has been destroyed by the activities of man.

With the coming of the Europeans to Florida, the Indian population began to decline as the result of introduced diseases to which the native tribesmen had no natural immunity, the enslavement of many of the natives, migrations, wars and perhaps other factors. The wildlife population was not seriously threatened until some time later. END.

SPORTSMAN'S BOOK SHELF

PHOTOGRAPHY AFIELD by Ormal I. Sprungman. Published by The Stackpole Company, Harrisburg, Penna. 450 pages, illustrated with photographs and diagrams. Price $7.50.

Photography Afield is a most complete guide for every camera-owning sportsman and outdoor photographic enthusiast. Prepared by Ormal Sprungman, long time photo editor of SPORTS AFIELD and author of several volumes of the Little Technical Library series, Photography Afield has been chosen by both amateur and professional photographers as a highly authorative reference and guide.

The 450 page large size volume deals with still photography and movies including all phases of color and black and white film, the uses of flash and filters plus the required camera handling techniques so necessary for successful outdoor and field photography. More than 400 beautiful photographs illustrate over 20 fact-loaded chapters on the Camera, Composition, Flash Photography, Camera Angling, Natural History, Hunting, Fishing, Darkrooms and Movie Making. Even the photographing of dogs, snakes, spiders, flowers and filming in Alaska and Africa are adequately covered.

Of special interest to the Florida outdoorsman are the sections devoted to leaping fish, water sports, underwater photography, birdlife, night fishing, and marine action.

"Photography is a great and wonderful hobby," claims the author. "As a companion to hunting and fishing and the outdoor life, it can change the whole course of a man's life. It can record for posterity the sparkling beauty of clean unpolluted waters and thick green forests. It can capture, momentarily at least and without bloodshed, the little creatures that race over the land and live in trees and swim the lakes and trace their patterns across the sky. All these are part of a God-given heritage which must not be wasted."

Photography Afield is so immense in coverage that several pages of review would be necessary to discuss even small portions of the many factual chapters so expertly presented for the camera-toting sportsman.

A small example of what Photography Afield contains can be found elsewhere in this issue under the title "Film Fun In Florida" prepared especially for FLORIDA WILDLIFE by author Ormal Sprungman. Whether you are sportsman, nature lover or just plain photographic minded, Photography Afield is a worthy and highly recommended addition to the library. -bh-

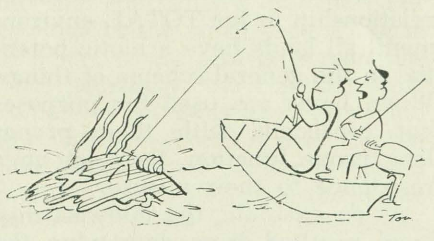
SWIFT IN THE NIGHT by William Byron Mowery. Published by Coward-McCann, Inc., 210 Madison Ave., New York 16, N. Y. Price $3.75.

Swift in the Night is a collection of stories on nature and wildlife by well known naturalist-writer William B. Mowery. Written in a lively, entertaining, and highly interesting manner, this book contains some of the best reading on an assortment of nature subjects that has come our way in a good while.

The author tells of the fox and its cubs; he writes about gathering wild mushrooms and taming wild birds; and he recounts the saga of the American wolf, an unjustly maligned creature that is now nearly extinct. He brings vividly to life the creatures of the outdoors that surround us, and he tells us how they live and behave.

The section devoted to the wolf is an especially enlightening account dealing with an animal which after centuries of persecution yet displavs a desire to associate on friendly terms with mankind. That there are places where the wolf should be allowed to go unmolested; many where the presence of the animal can not be tolerated Mowery points out as he makes a fervent plea for the preservation of a remnant of one of our most colorful native mammals.

The articles and stories in this book are based on the author's wide travels and experiences, and anyone of any age interested in nature and wildlife will enjoy it, both as a source of much fascinating new information, and as an exciting story of the wonders and discoveries of the great outdoors. -mn-



"Just as I suspected. You've got bottom."

PHEASANTS IN NORTH AMERICA, Edited by Durward L. Allen. Published by The Stackpole Company, Harrisburg, Pennsylvania. 490 pages, illustrated with photographs and drawings. Price $7.50.

The Pheasants in North America is another of the authoritive and comprehensive books in the Wildlife Management Institute's publication series dealing with specific North American wildlife species and their management.

All but unknown in the United States until introduced successfully as a wild bird in Oregon in 1881, the pheasant has shown itself adaptable to a variety of conditions. The Asiatic foreigner has taken hold in territory long ago vacated by the prairie chicken and other magnificent native game birds whose return has been made impossible by drastic man-made changes in the habitat.

So successfully has the pheasant adapted itself to this country that it is now, and has been for many years, in the upper bracket among our game species. North of the Mason-Dixon Line in the East, through the rich farmlands of the Middle West, and in the irrigated valleys flanking the Rockies, the ringneck is the favorite bird of the average farm game hunter.

Authored by leading authorities from all parts of the present day range of the pheasant in North America, this volume will answer in detail practically any question which might arise regarding the gaudy exotic.

The publication is edited by Dr. Durward L. Allen, associate professor of wildlife management at Purdue University. Dr. Allen formerly served as chief of the Branch of Wildlife Research of the U. S. Fish and Wildlife Service, and has authored many technical and popular publications on wildlife management.

Sportsmen, nature students, wildlifers, fish and game administrators, and any one else interested in America's wildlife will find much information of interest and value in this excellent book. -mn- END

FISHING

By CHUCK SCHILLING

SMALL WORLD:

On a West Indies cruise, my wife and I drove from Kingston, Jamaica, across the mountains to Port Antonio to put up at the famous Titchfield Hotel. The following morning, we took the celebrated bamboo raft ride down the rapids of the Rio Grande River to get back to the hotel just in time to have our lunch served on the terrace that overlooks beautiful Port Antonio Bay. We were hardly seated when the people at the next table called a cheery, "Hello, Chuck!" in a very un-British accent.

Holly Hollenbeck and his wife, Helen, had arrived at the hotel while we were shooting the rapids. Hollenbeck is a famous Keys guide and is presently Dock Master and fishing expert at the Ocean Reef Club at Key Largo. I can't honestly say I was surprised.

I'll make a small wager that if you journey to Timbuktu and then find the most out-of-the-way place to fish, the first person you'll meet will be another Florida Cracker. I'll lay two to one, he'll have a spinning rod in his hand.

NATIVE GUIDE:

Last year, I fished for trout in the scrub coutry of northern Michigan. The group I was with had hired a native guide, an "Old-Timer" who really knew the ropes. I fished with this guide one afternoon and from the beginning felt a little puzzled about how he talked, how he rigged his tackle, and how he fished. Finally, I asked, "Have you lived here all your life?" "Heck, no," said the native guide, "I'm from Sarasota, Florida."

Sports fishing in Jamaica, at least in the parts I saw, is practically unknown. Hollenbeck was busy as a bird dog trying to line up a boat and motor and, possibly, a guide to take him fishing. I spotted a 14-ft. plywood boat with a 10-horse kicker, being used as a tender between the hotel dock and our cruise ship anchored in the bay. I asked the boy who was running it if it could be rented to go fishing. He said it could for "$5.00 an hour." sports fishing in these islands. I saw This was the price set by the Chinese who owned the outfit. I know now what they mean by the "Yellow Peril."

We left Port Antonio before I learned how Holly made out, but I'll bet he found a boat (not solid gold), caught a lot of big fish on light spinning tackle, and had a wonderful time.

HOW TROPICAL?

While on this West Indies cruise, we visited Haiti and Dominican Republic as well as Jamaica. Jamaica is, roughly, 700 sea miles south of Miami. If it is safe to assume these West Indian Islands are truly tropical, then so is most of Florida, and, especially, south Florida. Except for the mountains, you could easily imagine you were in south Florida as you drive along the roads on any of these islands. Except in rare instances, the trees and shrubs, the flowers, palms, and bamboo, the cattle, wildlife, and farm crops are just the same. One exception is the breadfruit trees that grow everywhere in Jamaica. We ate some of this fruit and found it very good. I'll bet I can grow it in my own south Florida yard.

Nowhere did I see evidence of a few tackle shops fitted up with gear that would have looked more at home among commercial fishermen. I saw plenty of fish and plenty of good looking fishing water, both fresh and salt. If anyone is looking for come near virgin waters to pioneer, this offers a challenge.

NATURE'S RESISTANCE:

According to the theories of ecology, which is the science of man's relationship to his TOTAL environment, all lands have a biotic potential in the general scheme of things. When lands are used for purposes not consistent with their proper long range function, they set up a resistance to their misuse.

As an example, the midwest dust bowl resulted from destroying the ground cover of native grass on our great mid-continent prairies without regard to proper windbreaks or contour farming. Corn and cotton, row crops that rapidly deplete the soil's wealth and speed erosion, have all but bankrupt large areas of the south. Farming semidesert lands in the west, using underground water supplies for irrigation, has so depleted these water resources that a perpetual state of emergency now exists.

The future of fishing in Florida lies to a great extent in our proper handling of our remaining fresh water supplies. Prolonged drouth conditions and indiscriminate drainage have dried up countless lakes, swamps, and prairies. These bottom lands are a tempting prize to the cattleman and grower who, in many cases, have moved in as the water moved out. South Florida drainage has just about destroyed the Everglades as we know them.

Drouth and drainage are the twin evils of present day Florida. It's anyone's guess as to how much one is dependent on the other, or which comes first.

Drainage dries out the land, leaving it prey to fire and erosion. As the ground cover disappears thru fire or thru "improvement," the earth's surface reflects much of the sun's heat it formerly absorbed. The resultant thermal updrafts push the rain clouds higher and higher and speed them on their way untapped. It's a vicious circle, the end of which by no means is in sight.

Our wetlands are fast disappearing, and as they go, they produce conditions that, in turn, speed up the destruction. This is called environmental resistance. In "The Road to Survival," William Vogt has this to say on the subject:

"Throughout virtually the entire world, land is used not to produce the crop best adapted to it on a permanent basis but to produce as much cash as possible, as cheaply as possible and as quickly as possible—the same system exalted by the manufacturer.

"In other words, land is managed on the basis of so-called economic laws and in very general disregard of the physical and biological laws to which it is subject. Man assumes that what has been good for industry must be good for the land. This may prove to be one of the most expensive mistakes in history."

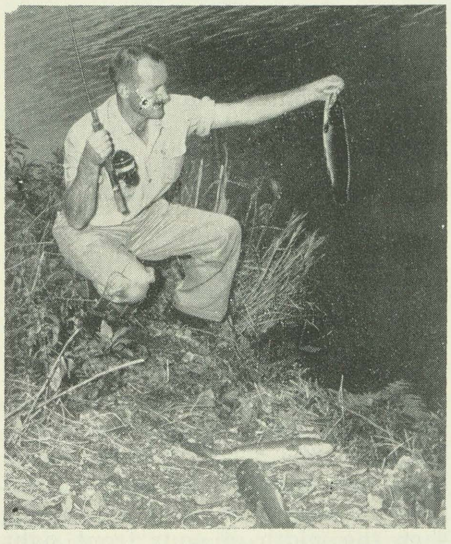
The basic necessity for fresh water fishing is fresh water. If some means is not found to break the vicious circle of drainage, fire, and drouth in Florida, we are in for a much worse time before things get better.

TOUGH GUY:

There is one member of the fresh water fish family in Florida that will still be around as long as there is a damp spot and a small piece of shade. Low water conditions never faze him. I've seen these roughnecks living happily in water best described as a thick slime. They go along undisturbed in this muck long after other species have given up the ghost. He is the bowfin, or mudfish, and as far as game fish go, he takes a back seat from no one. The bowfin will eat anything that moves and almost everything that doesn't. He has a big mouth, full of sharp teeth, and has a rock-ribbed, double-muscled body that produces more power per unit for him than anything else you are likely to latch onto.

On light tackle, the lowly mudfish will jump high as the lordly tarpon, size for size. He will take an artificial lure with pure relish and will chew it up and eat it if you don't get it back in record time. Bowfin have been called living fossils, as they are one of the last of a species of which all others were extinct since prehistoric times, and as all fossils have a right to be. The tough guy is well-equipped to survive, and I doubt if even drouth, fire, and drainage will make much of an impression on him at this late day.

The bowfin has a set of "so-called" lungs and, like the tarpon, can breathe air after a fashion. He can live in water muddy enough to plow and can live out of water completely for long periods. As if this were not enough, he has an armour-plated skin, is full of bones, and the quality of his flesh makes him very poor eating. All of this, coupled with his tendency to breed often and efficiently, makes him one fish we can be sure of in the future.


As far as game fish go, the mudfish will take a back seat from no one. He has more power per unit than anything else you are likely to latch onto. -bh-

If you have been turning your nose up at this unglamorous guy, perhaps you are missing a bet. Next time you see him rolling at the surface, try a top water plug on him, varying the speed of the return. If this fails, try a floater that digs in sharply on the return. Work it slow, then fast. If this fails, try a sinking plug or spoon. Let it go all the way down to the bottom after casting it among the rolling fish. Work the lure along the bottom in short pulls, allowing it to touch down between times. This sometimes works when all other methods fail and, incidentally, this same "on the bottom" retrieve, also, works very well on rolling tarpon and sometimes when all other methods are hopeless.

I hooked and landed a 9-lb. bowfin on the canal west of Vero Beach on Route 60 a few months ago that made a clean leap for each one of his pounds of weight. He literally tore the water apart in his efforts to dislodge the hook. When he did dog it, he did so with unbelievable power. I was fishing alone, so I had to take my own picture with my Rollei sitting on the hood of my car (delayed action shutter). I'll have to confess I put this fish back in the canal, where he undoubtedly is today.

Rough fish and predator he no doubt is, but he is a tough guy game fish for all of that, and, if you fish for sport, he is on hand to give you plenty. END

FILM FUN IN FLORIDA

(Continued from Page 27)

Once you have mastered your camera and get the proper feel of it, then swing from black-and-white, and try color film. You will be pleasantly surprised at the results. You will find that color filming isn't a great deal different from monochrome work, yet infinitely more fun.

Eventually you will find yourself shooting 8mm or 16mm movies, and many of the camera tricks you picked up with your still outfit are going to help with cinematography.

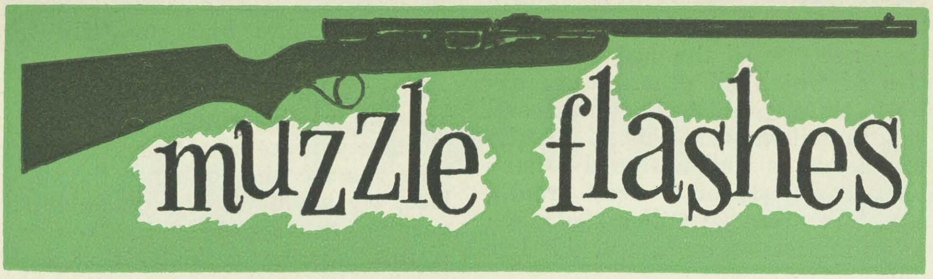
When we shot our first movies 30 years back, there were no 8mm cameras, no turrent fronts, few accessory lenses. Black-and-white film was all the rage, and early Kodacolor resulted from using a special colored disk over camera and projector lens to transform monochrome images into scenes of refreshing beauty.

Today amateur movie makers have nearly all of the refinements known to the professional cinematographer, including zoom lenses, wide screen and even three-dimensional.

Which size to choose—8mm or 16mm—depends on individual needs and the sportsman's budget. For showings before small groups and in the home, where a large screen size is not necessary, the compact 8mm is ample. Footage is less costly, and the initial investment is less. On the other hand, 16mm can be projected up to 9x12 feet, and since the frame size is four times larger than 8mm, greater sharpness is possible. Far more 16mm library films are available for public showings than 8mm, and this fact should be considered where the sportsman's projector assists in showing wildlife conservation film programs before local clubs.

The same rules which concern good composition, nice framing and perfect exposure apply to cinematography. In addition, proper scene length is important, best determined by experience. Steady camera handling is also desirable to prevent wobbly footage, and here the cameraman discovers that a tripod or other firm support is one of the prerequisites for good picture work.

Indeed, the movie camera and still have become a vital part of the life of the American sportsman, and now accompanies him on all of his jaunts. Make them a part of your life, too!
END.



muzzle flashes

By **EDMUND McLAURIN**

For several recent issues, handgun student-readers have been restricted to perfecting relatively silent shooting procedures. Gripping the handgun properly, assuming a shooting position affording natural alignment of handgun with target, steady holding, aiming and trigger squeeze exercises have all been "dry firing" operations with little, if any, attendant noise.

But for this month's lesson, get your gun and a box of ammunition; we are going to a safe range to shoot!

As a student, you aren't going out to hurriedly "bang-bang-bang!" at either tin cans or regulation round bullseyes; instead, your target will be a striped, narrow, vertical target like the one in the illustration. We cannot buy such a specialized target ready-made, so let's construct one before leaving for the firing range....

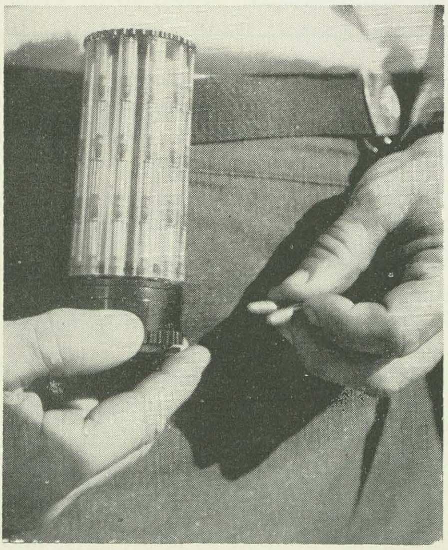
An easy way to make this special training target is to take a board that is six inches wide and six feet long and paint it solid black on one side for five feet of its length. Next, let's cut a companion strip exactly five feet long from standard 1x2 inch lumber and paint this narrower piece solid white for its full length. When the two pieces are dry, we will lightly nail the narrow white strip down the center on the wide, black board, their painted top ends flush with each other. Let's be sure that the white strip comes straight down the center of the under board. The finished job will represent a six inch wide black board with a super-imposed contrasting white stripe down its center for a length of five feet, and an unpainted twelve inch extension of base stock to bury in the ground to hold the target upright. In setting up this very practical training target for firing practice, we must remember to check to see that it stands perpendicular and at a true right angle to the ground.

In making the training target, you can, of course, take a wide board and paint alternate and colored stripes on it, but it is much easier to paint a board solid black and super-impose on it a narrow, white wood strip. Further, when a white strip gets pretty well shot up all along its length, you can knock loose its holding nails and put on a prepared replacement. The wood strips are also cheaper than two inch width adhesive tape or automobile masking tape, for creating the white center stripe.

As you view it as a target, the black base board will no longer appear as a six inch width of solid black, but it will appear as a striped painted post that starts with a two inch band of solid black, changes to a two inch parallel band of solid white and then has another two inch band of black area. (See the illustration.)

Your aiming mark is the narrow white line that runs down the length of the black plank. Move back from it until the white band appears to be just a trifle wider than the width of your front sight as you take aim.

You aren't concerned with rear sight elevation in this specialized firing practice, so the handgun's elevation adjustments can be left alone for the time being. Your sole objective is to hit that white center line somewhere along its length, for shot after shot. To do it, you will have to perfect your trigger control so that once your black front sight is aligned on the white line it will remain aligned until after your shot is completed. Viewed objectively, this accomplishment may seem relatively easy; in actual shooting, it will be difficult to do consistently at a distance from which the width of the front sight appears approximately the width of the white stripe. Jerk the trigger at the final instant of firing, hurry your shot, or flinch from anticipated noise, and you'll likely waver off the white line and your bullet will hit somewhere in the bordering black—if it doesn't miss the slim target entirely!



The "Shell-O-Matic" plastic .22 caliber ammunition holder is ideal for handgunners. Attached to the belt it holds a full box of ammunition; dispenses one cartridge at a time much like a bus driver's coin-holder makes change.

As stated in a previous text, although mechanically the same as an operation, properly squeezing a handgun's trigger in actual shooting is much harder to do than with an empty gun. With live ammunition, the anticipated noise and recoil, and anxiety to make a perfect shot, contribute to the tendency to jerk the trigger at the final moment of release. Very often, too, noise of firing and resultant barrel whip will cover up serious shooting errors.

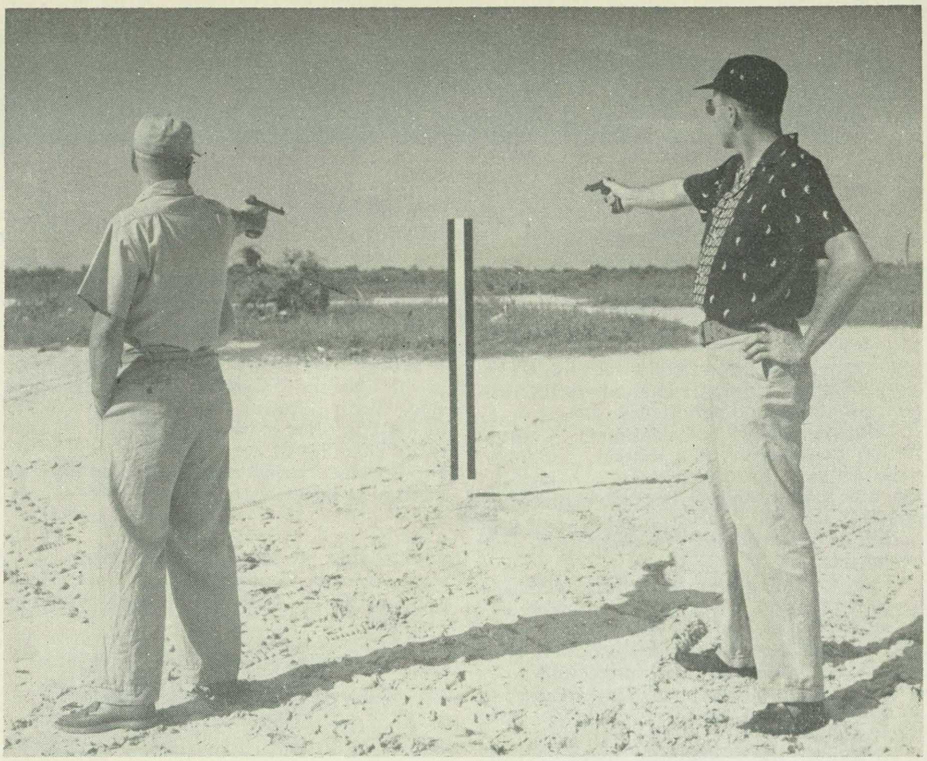
Therefore, it is a good idea to "dry fire" a few simulated shots with an empty gun, between periods of live ammunition burning, to double check on one's assumed trigger control mastery. If the handgun used happens to be a revolver, partially loading the cylinder and then spinning it Russian roulette fashion before taking aim accomplishes the same thing, since you will not know whether your aimed shot will be a real one or not until the hammer falls. If the particular shot does happen to be a "dud," you will be acutely conscious of exactly where your sights were aligned when the trigger is released. Also, if the handgun used is a double-action revolver, cock the hammer for each shot and use it strictly as a single-action weapon, to encourage deliberate and controlled firing.

In carrying out this very beneficial type of practice firing, take plenty of time to first get handgun grip, natural aiming stance and other influential fundamentals correct for each shot. You aren't concerned with how many times you shoot, but how many bullets out of the total number of rounds of ammunition fired hit the narrow white line!

When taking aim, select a particular area of the white line and shoot within that area of the target board until registered hits have formed a cluster of shots—to further indicate how well you're holding (controlling you shot group dispersion). Then select a fresh spot on the target and fire your second string of shots. It's better to start at either the top of the vertical white line and work down by successive shot strings, or begin at a point somewhere near the bottom and work up. This method also tends to give a single target strip longer life and surely guarantees its usefulness for at least a full practice session.

At the most, fire not more than fifty shots during a single practice and try to spread out their firing over a period of two hours. In this training phase, you want to do more position experimenting and more thinking and analyzing of your operations than firing. You can do this only if you budget yourself on allotted ammunition—something you can surely do if you will take only **one** box of ammunition to the range and leave the rest at home! Will yourself to take plenty of time and to make each shot count.

No person can hold a handgun with absolute steadiness for shot after shot, but of all the many little errors that can creep in to spoil ultimate accuracy those of lateral effect seem to be most pronounced.



Nothing will emphasize one's degree of handgun mastery, especially the trigger control phase, like shooting at a vertical line that appears to be the width of the handgun's front sight.

Eliminate sidewise barrel movement and you are well on the road to expert handgun shooting.

Handgunners of some years experience, who now consider themselves pretty fair shots with a revolver or autoloader, will possibly be considerably shocked and chagrined following an afternoon's test-shooting at a narrow vertical target such as pictured!

Nothing will emphasize one's degree of handgun mastery—especially the trigger control phase—like shooting at a vertical line that appears to be the width of the handgun's front sight. It is a form of practice that both the beginner and the expert will find instructive and beneficial. END

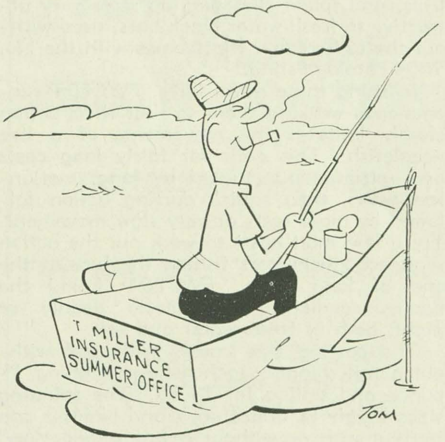
POMA THE SNAIL

(Continued from Page 29)

had shot green leaves above the broken-stemmed beige ones of the previous spring, there were eight more clusters. Out in the river on the small island of two cypress trees, several others could be dimly seen.

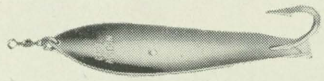
The angle of the sun's rays on the water changed and the mists disappeared until the rays of the sinking sun would strike the river at a sharp angle again. Now the eggs weren't white, but a delicate pinkish-lavender. The color of the ends of babies toes. The fragile tint of fading rose petals. Against the muddy brown of the snag, the tan and green of flag stems, the weathered gray of the cypress trunks, pink-pearls in strings and brooches gleamed faintly. A number of *Pomacea* snails besides Poma had heeded an urge without comprehension. And this was only the beginning.

Before spring and summer had passed once more, Poma and kin would have decorated almost everything that stood, floated or grew in the river. The drifting plants and flotsam, the pilings of docks and bridges, even the sides of the rowboats at the fish camp would all wear jewelry. Out of this profuseness, this staggering prolificness, some would survive to lay eggs in their turn. Only by such manifold issue could the snail hope to perpetuate itself. Of course, Poma did not actively hope. It only crawled above the water at night and sometimes laid eggs. It was part of the pattern of snail life. A pattern to be obeyed.



Where was Poma now on this splendid morning? Resting according to pattern. Down beneath the surface, behind a log or under a carpet of eel grass, Poma clung to something to stay upright and keep from washing away in the strong current. Poma would stay there while Aramus the Limpkin searched the shallows on long legs, while fresh-water mullet slapped at the sunbeams on small waves from sheer exuberance, while many of Poma's eggs were crushed by curious pecks, nudges and nibbles their overnight appearance would occasion from the fauna world. And if Poma was well hidden, towards dusk its slow and careful investigation of the river would be continued. MLN END

FLORIDA WILDLIFE FIELD TESTS AND TELLS



AMONG the basic types of lures ideal for spinning, bait casting and trolling, a good spoon can be a safe selection for the tackle box, for there are occasions when fish will go for spoons—and definitely!

Until the scientifically-designed "Captain Action" product hit the market, fishermen were without a truly rustless, non-tarnishing spoon bait. In use, available plated or painted products either had to be kept polished or colored to maintain full effectiveness.

The "Captain Action" spoon, available in seven sizes, can never rust or tarnish because it is made of stainless steel, is fitted with silver-soldered McMahon stainless steel swivels and stainless steel connecting rings and utilizes a stainless steel screw that defies stripping; at least FWFT&T could not strip screw threads in several attempts!

Although the "Captain Action" all-stainless steel spoon is revolutionary among spoon type baits, it was not rushed into production to hurriedly cash-in on the long-standing, recognized need for such a product. Genial Ed Butler, head of the Sarasota firm that now makes the lure, first made certain that his product had scientific designing and assured fishing performance before he announced its availability. In conducting field tests, various experimental shapes were trolled and their performances studied from a second boat following behind and alongside the lures. Finally, Butler and his engineers had two acceptable designs that looked almost identical to the eye but had differences in action, one lure making an extra, darting flip every few seconds, revolving and twisting on itself but without twisting or fouling the line. Subsequent tests during the Florida kingfish runs proved the latter design superior; forty of forty-seven kingfish favored one design over the other when the lures were worked side-by-side.

Butler had perfected his lure and was satisfied with its action and performance, but it took another year to make the cutting dies, this work being patiently performed by a highly-skilled German craftsman who learned his trade 54 years ago in Germany and who customarily worked within one ten-thousandth of an inch tolerances. It cost Butler and his associates a great deal to make five dies; only the best of such will last when machining stainless steel.

Use of almost diamond-hard 18-8 stainless steel makes for a very tough finished product that takes an extremely high and lasting polish. The material used is so tough that, in a test made at a recent national sports show, a broadhead arrow cast from an 80-lb. bow at close range failed to penetrate it.

Since its appearance on the market, the "Captain Action" spoon has created its own advertising. Taking the kingfish record for the State of Florida, on a #10 size lure, was a starter. Then Ed Luoys and Roy Martin, salt water anglers well known to Floridians, used the "Captain Action" spoons to take permit from Long Key Bridge. Dana and Betty Boose, of Florida West Coast TV fame, introduced the "Captain Action" to Nassau waters and film-recorded its success far from home. FWFT&T used the "Captain Action" during Florida's last two major kingfish runs and piled fish a foot deep in the boat!

FWFT&T much prefers sizes 2, 3 and 5 for all-around fishing, but suggests having a size No. 7 along when the big ones are biting.

Aside from its fish-catching qualities, you'll like the "Captain Action" stainless steel spoon because you can toss it in the tackle box after a trip with never a thought to its cleaning or care, knowing that it will be in good condition and ready to go to work when next selected.

List prices start at 95¢ for the size No. 2 and rise to $1.50 for sizes Nos. 7 and 10.

Available at your local sporting good store, or from Captain Action Tackle Company, 1806 Oleander Street, Sarasota, Florida.

WHAT with the current crop of artificial baits being made in hundreds of different designs and combined actions, it is truly unusual to find one that is so radically new and alone, yet so lifelike, that it gets attention right away—especially when the interest comes from both fishermen and fish. At Winter Park, Florida, the Boone Bait Company manufactures a comprehensive and quality line of nylon jigs, flutter plugs, cork-bodied poppers and assorted casting plugs, but the catalog listing that gets the most interest whenever the Boone line is displayed to the public is their "Needlefish," made in two casting size designs as well as two spinning weight choices.

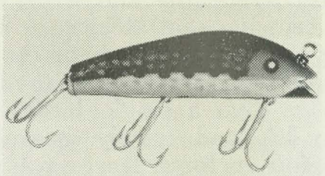
So far as FWFT&T knows, the Boone product is the only needlefish artificial currently manufactured. It has been long needed, for, among the natural baits, the elongated, elusive needlefish has always been a favorite with Florida fishermen.

At Cocoa, Florida, a location that has justly earned the intriguing title "trout capitol of the world," the Boone needlefish lures have earned the permanent confidence of Indian River anglers; scarcely a week passes without a large fish being taken on one of the Boone baits, Mayor Gary Bennett, of Cocoa, advises.

FWFT&T had very good luck with the Boone needlefish artificials on the grass flats back of Egmont Key, taking 42 trout in three trips, and found the spinning sizes very attractive to fresh water black bass, used without the tail spinner that comes with the No. 7004 catalog listing.

In using these novel lures, FWFT&T recommends working them so that their action closely imitates the movements of a live needlefish. This calls for fairly long casts and retrieves punctuated by long, motionless waits, then squick darting action followed by more rests or very slow movement. Try a few short casts to work out the action sequence, then start fishing the lure at the end of long casts. FWFT&T found the Boone needlefish particularly deadly at night, both in fresh water and salt.

The casting size comes with and without a tail spinner, each listing weighing ½ ounce and selling for $1.35. The spinning sizes weigh ¼ ounce each and likewise can be had with or without a tail spinner, and retail for $1.25. FWFT&T has had better luck with the spinnerless styles and especially recommends Nos. 7001 and 7002 if you cannot afford one each of all four catalog listings. All have the same green-scale finish and feature yellow eyes with dark centers.



IF you have resided in Florida for any length of time, and are active as a fisherman, it is improbably that you have escaped hearing about the Jim Pfeffer Banana Plug. For many years it's been a proved fish-getter in both fresh and salt water for anglers fortunate enough to acquire one from Pfeffer's limited production for the commercial market. Now, the once-limited handcarved and handpainted models are being numerically produced in colorful Tenite plastic, but with all the built-in action and deadliness of Jim's originals, in both spinning and casting weights.

FWFT&T first made the acquaintance of the Jim Pfeffer Banana lures in 1945 while fishing the Mosquito Lagoon waters near Titusville with their inventor, then living in Oviedo, and Dr. Wilbur Davis of Orlando. Using a Jim Pfeffer plug with a yellow body and red spots the current #101 catalog listing), Dr. Davis caught a number of trout above six pounds in weight and Jim, sitting low in the bow of the boat and casting his plugs with finesse, took a whopper that exceeded eleven pounds. That day, seeing was believing!

For fresh water bass, FWFT&T later found the Pfeffer lures equally deadly, with the yellow frog, gold shiner and white-gray color combinations getting the most response as performers. The correct way to use any of the color in fresh water is to cast the floating plug near shoreline, close to logs, bonnets or grass patches, and then let the plug rest until all created ripples have vanished. Then give the rod tip a single, quick jerk. Let the lure rest for another five to ten seconds, and jerk the rod tip a couple of times —just enough to keep the lure moving a few inches at a time. Repeat the outlined procedure throughout the retrieve. Due to the curvature of the Banana lure you can jerk it many times in the same area and it will come up almost where it went down.

Using the lures in salt water, you have the choice of making them work on the surface or deep, depending on the depth of the water and the feeding habits of the fish being sought. Retrieving the plugs via a surface run produced through constant reeling or short jerks is effective. Deep runs can be tried by making a long cast and retrieving the lures fast for a couple of seconds (to make the baits dive); then reducing retrieving speed and action to suit personal whims. Using the described "deep dive" method, Walt Hudson, Jr., Orlando sporting goods dealer, caught a 94½-pound Jewfish while plug casting with the Banana lure at Cape Romano, Fla., last year.

While any color selection from the Jim Pfeffer bait listings will catch fish, FWFT&T

especially recommends Nos. 100-200, 101-201, 102-202, 104-204, 108-208 and 111-211. The first number in each color is the casting size; the second one or the "200 series" represents the spinning weight.

Distributed by Pat Woodall Specialties, P. O. Box 1547, West Palm Beach, Florida, for Jim Pfeffer.

If FWFT&T could have only half a dozen plugs, the Pfeffer Banana Plug would be one of them!

SQUIRMING DOLLARS

(Continued from Page 36)

staple fare. Martin can cite numerous occasions when big, selected worms have taken fish above average size for him.

Many of Florida's live bait vendors will serve customers only during designated hours, but Martin answers his call bell twenty-four hours a day. He believes in selling worms when the customer wants them, not merely at the vendor's convenience. The St. Petersburg worm-rancher laughingly describes how some fishermen will buy only worms dug after darkness and packaged before dawn, on the theory that such acquisitions are better fish-getters than those dug by daylight!

To hook a worm so that it will stay on your hook and appear attractive to a fish, push the point through the tough band or collar found in the head half of the body.

Whether managed only as a daytime enterprise, or around the clock, Florida worm-bait marketing is now big business. However, an operator cannot just sit back and rake in cash profits from his breeding stock increases. As Martin points out, a continuously successful Florida worm-rancher must keep as active as his worms—which isn't easy! END

dog chatter

By **GEORGE CROWLEY**

Rhodesian Ridgeback

THE Rhodesian Ridgeback, native dog of South Africa, has been admitted to the American Kennel Club Stud Book and becomes one of the breeds for which show-giving clubs may offer classes at their shows. The new breed, which will be shown in the Hound Group, is the 112th to be recognized by the A. K. C.

In general appearance the Ridgeback, or Lion Dog, as he is sometimes called, is 75 pounds of muscle, symmetrical in shape, capable of great endurance with good speed. He stands 25 to 27 inches high at the shoulder, with the female an inch or two shorter and about ten pounds lighter. A quick look into the dog's face, and you'll probably decide you are looking at a Weimaraner—particularly if the specimen is a light wheaten color, because the color of the eye will be so light. The colors of the breed darken to a red wheaten, and the eye also.

It is estimated that there are between 300 and 400 specimens of the breed in the United States and as an initial step about 125 individual dogs have been registered. These dogs, all imports from Africa or direct American-bred descendants of such imports, together with all other such dogs which will be registered, will constitute the foundation stock for the breed in the American Kennel Club records. The Rhodesian Ridgeback is a native of South Africa having been bred by the Boer farmers to fill their specific need for a serviceable hunting dog in the wilds.

The Dutch, Germans, and Huguenots, who immigrated to South Africa in the sixteenth and seventeenth centuries brought with them Danes, Mastiffs, Greyhounds, Bloodhounds, Terriers and other breeds. For 100 years from 1707, European immigration was closed, and the native dogs played an important part in the development and ultimate character of the Ridgeback.

The Hottentots, a native race living within range of these early settlers, had a hunting dog that was half wild with a ridge on his back formed by the hair growing forward. There was interbreeding between these dogs and those of the settlers, and this cross-breeding, in due course, established the foundation stock of our present-day Ridgeback.

* * *

In Detroit, Michigan, two dogs were sent to the dog pound following the death of their owner. They were bailed out in a hurry when it was found that they had inherited $500 under the terms of her will.

END

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COMPLETE LISTING OF PRIZES AND RULES IN THE AUGUST ISSUE

WEBFOOT WANDERERS

(Continued from Page 31)

are not sufficiently versed in duck identification to be able to identify all birds that come to hand. Some waterfowl occur regularly each season but in limited numbers and in but a small portion of the state. The blue goose, for example, occurs in small numbers each season in various places from the St. Marks Refuge and Apalachicola Bay westward.

Here on these pages are presented some of these more or less uncommonly seen and even less often recognized winter visitors. Maybe a likeness of the strange bird you downed last season, or will bag next fall appears here.—MHN. END

BUFFALO IN FLORIDA

ANDRES DE PEZ, governor of Spanish West Florida from 1687 to 1697, set out on a deer hunt from Pensacola to the Rio del Almirante country. He sailed across Pensacola Bay and up East Bay to the river now known as Yellow River, which meanders down from Alabama through Okaloosa and Santa Rosa counties before flowing into East Bay. Governor de Pez was disappointed. Not one deer did his hunting party see. Instead, of all things, they saw buffalo, the broad-headed American bison.

It's hard to say exactly when the buffalo came to Florida or when it died out, but that they were here is definite. Spanish reporters of the De Soto and other early expeditions called them native cattle. The descriptions of these "cows" and "cowhides" can only be that of the bison.

From Spanish writings the bison's range did not include the whole state of present day Florida, but was limited to the northern and western portions. Escalante Fontaneda, who was shipwrecked on the Florida keys around 1550 when about 13 years old, lived 17 years with Florida Indians before he was rescued. Fontaneda served as a guide for later Spanish explorations and wrote a book entitled *Memoria* covering his experiences. Fontaneda listed "Woolly cattle" among the staples of the Apalache diet, Apalache being that Indian province around the present state capital.

Although Cabeza de Vaca (with De Soto) mentioned cowhides frequently, it was not until he had journeyed west of Florida that he wrote:

"I have seen them three times and eaten their meat, and it seems to me that they are about the size of those in Spain. They have small horns, like Moorish cattle, and long hair, as shaggy as a rug. Some are brown and some black, and in my opinion they have better and juicier meat than those over there (Spain)."

De Vaca further wrote: "From the full size ones the Indians make robes with which to cover themselves; from the largest they make shoes and shields. They come from the north right on down through the land of the coast of Florida, and spread over a region of more than 400 leagues. And all along the route of the valleys through which they travel the people of the region gather. They live on their meat, and furnish the whole region with a great quantity of their hides."

In an 1854 translation of the Fontaneda *Memoria*, the following footnote appears: "The bison appears to have ranged in considerable numbers through Middle Florida a hundred and fifty years ago. It was considered in 1718, that the Spanish garrison at Fort San Marcos, on a failure of stores, might subsist on the meat of the buffalo."

The Fort San Marcos referred to was probably the Spanish garrison on the St. Marks River in Wakulla County rather than the more reknown San Marcos at St. Augustine.

Florida soil has also been trampled by a pre-historic bison, a much larger animal, but the bison still here when the Conquistadors came was just like those of the great buffalo herds of the western plains. In fact, archeologists believe the Florida bison wandered east from the plains and lived in the eastern United States until they were killed off, such as almost happened to the western herds.

Familiar to Americans through the buffalo nickel, the bison has a large head with short horns and a thick mane on head, neck, and shoulders. It also has a hump on the shoulders. The bison is not a tall animal, about five and a half feet to the height of the hump, but they are stockily built. A large bull may weigh well over a ton while cows weigh around 500 pounds less.

May is the birth month and births are usually single. The calves can follow the herd when they are a couple of days old. A young cow is usually the leader of the herd which constantly moves about, foraging for grass.

By 1889, with only 500 survivors left, governmental protection was necessary to avert extinction of the species. Under this protection the buffalo responded to such an extent that several years ago the herd in the Great Smokies National Park outgrew its food supply and some surplus animals had to be sold to private owners. Several animals were purchased by cattlemen in northwest Florida where they gave motorists quite a start when spied suddenly midst their bovine companions. Little did the motorists realize that the buffalo was returning to crop pastures in an area from which the species had been absent only about two hundred years. MLN

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SUNSHINE FLAT-TAILS

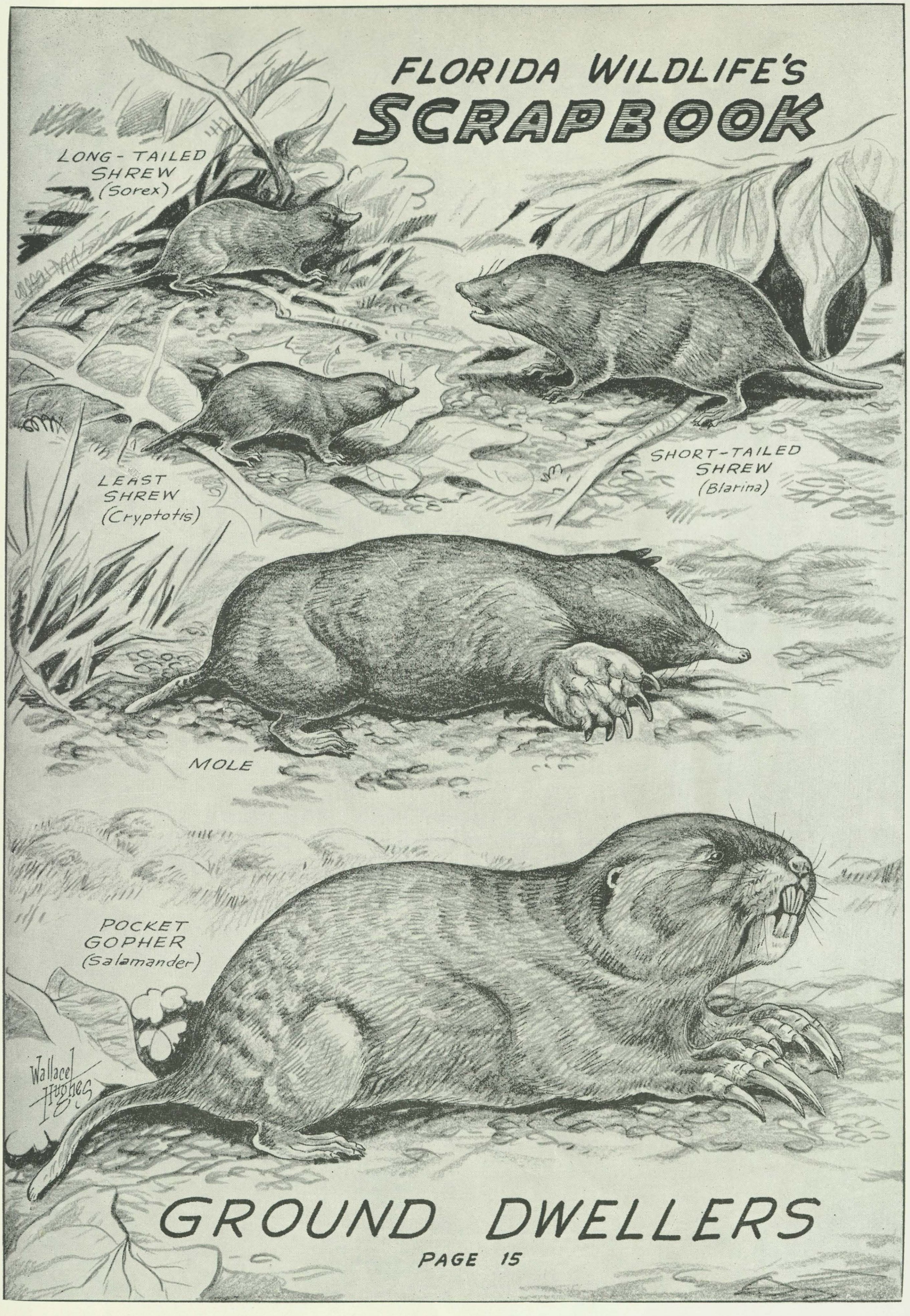
(Continued from Page 23)

times cut by the animals. It is the deciduous trees that are by far the more important, however.

Although at one time not so long ago the beaver was extinct or at best greatly reduced in numbers in most parts of the country, conservation measures fortunately were initiated in time. Over a good deal of its former range, the beaver no longer teeters on the brink of oblivion.—MN— END.

Leaves from the Egyptian henna bush have been used for centuries in making reddish dye for coloring human hair.

FLORIDA WILDLIFE'S SCRAPBOOK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